17th EDINEB Conference
Crossing borders in Education and Work-based Learning

June 9 - 11, 2010
Thames Valley University, London, UK

Edited by:
Steve Halley, Chris Birch, Dirk Tempelaar, Mike McCuddy,
Núria Hérnandez Nanclares, Sandra Reeb-Gruber,
Wim Gijselaers, Bart Rienties, Ellen Nelissen
Program

WEDNESDAY, JUNE 9, 2010

08:30 : 09:00 Registration
09:00 : 09:15 Opening by Bart Rienties
     Room: Lecture hall PRG04
09:15 : 09:30 Welcome by Professor Peter John
     Room: Lecture hall PRG04
09:30 : 10:30 Keynote Address by Jackie Alcalde Marr
     Room: Lecture hall PRG04
10:30 : 12:00 Parallel Session 1
12:00 : 13:30 Lunch
     Room: Mezzanine
13:30 : 15:00 Workshop Session 2
15:00 : 15:30 Refreshments
15:30 : 17:00 Parallel Session 3
17:00 : 18:00 Parallel Session 4
19:00 : 00:00 Conference Gala Dinner at Holiday Inn Brentford Lock Hotel

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     Room: Mezzanine
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12:30 : 14:00 Lunch
     Room: Mezzanine
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     Room: Mezzanine
15:30 : 17:00 Parallel Session 7
17:00 : 18:00 Parallel Session 8
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10:00 : 11:00 Keynote Address by Stuart Laing
     Room: Lecture hall PRG04
11:00 : 11:30 Refreshments
     Room: Mezzanine
11:30 : 13:00 Parallel Session 10
13:00 : 14:00 Lunch
     Room: Mezzanine
14:00 : 14:30 Reflections by Sandra Reeb-Gruber
     Room: Lecture hall PRG04

17th EDINEB Conference: Crossing borders in Education and Work-based Learning
Contributions listed per session

Wednesday 9th of June 2010

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Jackie Alcade Marr, Oracle, University of San Francisco- Drexel University

Parallel Session 1.1. Crossing Borders between Education and Workplace, 10.30 - 12.00, Room 1 PR110

Work-Based Learning versus Work-Related Learning - an exploration of the possibilities of work-related learning through a review of the Venture Matrix at Sheffield Hallam University, UK.
David Laughton, Sheffield Hallam University

Relationships and Partnerships – the key to success: a case study of graduate internships
Jerry Allen, Thames Valley University

ENTERPRISE EDUCATION: Can one cap fit all?
Mike Clements, Staffordshire University

Parallel Session 1.2. Crossing Borders between face-2-face Education and Distance Education, 10.30 - 12.00, Room 2 PR111

An Exploration of the Use of Video Screen Capture Software with Tablet PC and Voice Over in Teaching Concepts in Financial Mathematics
Don Cyr, Brock University

Blended Learning in Econometrics. Crossing borders between Learning and Doing
Ana Jesús López & Rigoberto Pérez Suárez, University of Oviedo

Technology enhanced support for remedial maths: addressing the needs of heterogeneous cohorts of specialist engineering students
Venkat Sastry & Piers MacLean, Cranfield University

Parallel Session 1.3 Open Track, 10.30 - 12.00, Room 3 PR112

Ethical Competence: the Roles and Responsibility of the Business and Management Higher Education Sector
Steve Reeve & Jorj Kowszun, University of Brighton

Corporate Diversity Engagement meets Business School Diversity Initiatives: Initial Observations
Peter Daly, Groupe EDHEC & Isabelle Sequeira, EDHEC Lille

Experiential Learning in Accounting
Leslie Blyth, Grant MacEwan University

Workshop Session 2.1 Crossing Borders between Nations and Cultures, 13.30 - 15.00, Room 1 PR110

Excellence in international education; a European context
Zuke van Ingen, INHOLLAND University

17th EDINEB Conference: Crossing borders in Education and Work-based Learning
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Sheila Cameron, Open University Business School

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Marieke Romers & Wilma Hoedemakers, Avans University

Challenging the Very Idea of Measuring Learning in the Professions: An interplay between a measure of learning strategies and learning theory  
Alexandra Niculescu & Jan Nijhuis, Maastricht University

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OpenScout: Competence Based Management Education with Community-Improved Open Educational Resources
Marco Kalz & Marcus Specht, Open University of the Netherlands & Jan Pawlowski, University of Jyväskylä

Twitter as an Emerging Technology for Business School Students: Learning and Engagement in a Cross Cultural Environment
Timothy Shea, University of Massachusetts Dartmouth, Pamela Sherer, Providence College, Rosemary Quilling & Craig Blewett, University of KwaZulu-Natal

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Christoph Schwarzl & Erich Hauer, Wirtschaftsuniversitaet Wien

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Chris Birch, John McDonald, Jerry Allen & Ewa Tomaszczyk, Thames Valley University

Explaining Work Related Learning
David Gijbels, University of Antwerp, Isabel Raemdonck, Leiden University, Dries Vervecken, Free University of Berlin & Jonas van Herck, Protime

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Markus Ammann, University of Innsbruck
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How Choose Students their Learning Tools, when Studying in a Blended Learning Environment?
Dirk Tempelaar, Bart Rienties & Bas Giesbers, Maastricht University

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Mike McCuddy, Valparaiso University & Sandra Reeb-Gruber, INHOLLAND University

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Gwen Noteborn, Martin Rehm, Maastricht University & Denver Mullican, N.A.
Wednesday 9th of June 2010
Keynote 1

Jackie Alcalde Marr

The title of Jackie's keynote presentation is "Corporate Learning & Social Media Meet the Net-Generation vs. Lifelong Learner". The workforce emerging from our educational institutions will carry global businesses forward into the twenty-first century. Will they be equipped to participate in the global economy? Will our corporations be able to provide an environment that will capitalize on their talents and passions? One thing is certain, our approach to education must continue to change to engage these innovative minds. In this opening keynote we will explore corporate learning strategies, partnerships that blur the lines between academia and business, and how social media is enabling our ability to cultivate learning communities that make a difference.
Work-based learning versus work-related learning - an exploration of the possibilities of work-related learning through a review of the Venture Matrix at Sheffield Hallam University, UK.

David Laughton, Sheffield Business School, Sheffield Hallam University, d.j.laughton@shu.ac.uk

Abstract: The role of work-based learning (WBL) in the development of student employability skills is well researched. Although universities have responded positively to both the opportunities and challenges of work-based learning, there is still a sense that demand outstrips supply for WBL opportunities in higher education. Many institutions, therefore, are offering work-related learning (WRL) as a substitute for work-based learning. The paper will review an approach to WRL within the “Venture Matrix” (VM) at Sheffield Hallam University in the UK, and compare and contrast student learning outcomes with those identified in the WBL literature. The paper will reflect upon the key issues in designing WRL, the nature of knowledge and skills development in this approach, the value placed on WRL by students, and, ultimately, the extent to which WRL can be used as a substitute for WBL.

Introduction

The role of WBL in the development of student employability skills is well researched. In higher education in the recent period there has been an expansion in the number of forms in which WBL takes place: traditionally the placement or internship was the predominant form, but this is now expanded by organisation-based projects, student consultancy, volunteering, on-campus employment linked to curriculum or course-based activities, and organising roles in student union events, to mention a few. Although universities have responded positively to both the opportunities and challenges of work-based learning, in terms of linkages with the curriculum, accreditation and supportive processes, there is still a sense that demand outstrips supply for WBL opportunities in higher education. Many institutions, therefore, are offering WRL as a substitute for work-based learning, where the latter is difficult to provide for in terms of curriculum match, resources available and logistical necessities. There is no agreed and precise definition of WRL, but the approach adopted in this paper is:

“learning which results in knowledge, skill or attribute development derived from engaging with tasks, processes and environments similar to those that occur in specific organisational and vocational contexts.”

WRL is not presented as being inferior to WBL, but to contain a different (and worthwhile) set of opportunities for employability skills development within university programmes. The differences between WBL and WRL will be explored in the paper by drawing upon relevant academic literature.

The paper will review an approach to WRL within the “Venture Matrix” (VM) at Sheffield Hallam University in the UK. The VM offers a range of learning opportunities for students: group projects with employers, projects with Sheffield Hallam University as a public sector organisation, mentoring opportunities with school children in the region with the aim of facilitating their enterprise skills, and student group projects focused on entrepreneurial activities to identify value adding activities with market potential. It is the latter set of opportunities that will be investigated in this paper. A focus group research method is adopted to generate data which is then subjected to content analysis to identify the nature of the skills and attributes students feel they have developed whilst participating in VM activity. The findings from the data are then discussed in the context of the literature on WBL and WRL to reflect on the similarities and differences in learning experienced in these contexts. The paper reflects upon the key issues in designing work-related learning, the nature of knowledge and skills development in this approach, the type of knowledge created within the context of the broader knowledge development practices of universities, and the value placed on WRL by students. The recommendations of the paper relate to the ways in which work-related is understood and configured to produce maximum benefit for those engaged.

Work-related and work-based learning

Margaryan (2008) suggests that the growth in interest in work-based learning (WBL) is linked with the need to rethink the notion of valid learning in the context of current challenges faced by organisations. These include increased global competition, the move from hierarchically-based organisations to flatter and task/team-based structures, and the rapid development of information and communication technology. According to Nixon et al (2006) WBL incorporates a process rather than a content driven curriculum, which is learner centred. Learning outcomes are
agreed in a tripartite manner, involving learners, the school/college or university and the relevant employer(s)/organisation(s).

Learning is experiential in nature, self-directed, and underpinned by a critically reflective approach. Assessment of progress and achievements is evidence-based and often involves a mixture of learner (self), tutor and employer judgements and comments. The nature of learning is characterised by it being (Nixon et al, 2006, p.40):

1 task-related – learning arises from performance of task in the workplace and tackling workplace problems or issues;
2 innovative – new techniques and approaches are devised to meet new situations;
3 autonomously managed and self-regulated – learning takes place without direct instruction or formal tuition; students are expected to take responsibility for their own learning;
4 concerned with enhancing personal performance and improving organisational performance.

WBL then is clearly different from classroom-based, instructor dominated approaches to education focused on transmitting substantive knowledge of a factual, conceptual and theoretical nature associated with a particular discipline, with the aim of learners being able to reproduce this. It is different with respect to the nature of knowledge developed and the pedagogical strategies required to support it.

WRL itself has a long history in a higher education context. The definition of WRL adopted in this paper has been presented in the introduction. It is a more wide-ranging and amorphous concept in contrast to WBL, and can be seen in a variety of delivery modes and educational programmes: professional courses (courses related to professional bodies), vocational educational provision in technical universities or universities of applied sciences (Laughton and Ottewill, 1998), and programmes with a specific work focus e.g. MBAs (see Byrkjeflot, 2002, for a relevant discussion in this context). The aim of WRL is to help to prepare learners for participation/employment in an organisational context by equipping them with relevant knowledge, skills and attributes that can be used and applied in situ. A distinguishing feature of WRL however, in relation to WBL, is that it does not take place in the workplace. WRL pedagogy has attempted to simulate, replicate or mimic workplace situations or problems, but the context of the learning experience (and hence any actual learning experienced) is different. Unfortunately, the terms WBL and WRL are often used synonymously, or in a way to suggest that there are significant similarities. Two quotations will be used to illustrate this point (italics added for emphasis):

“WRL can be taught anywhere, from the HE institution to the manufacturing floor of a local company. Traditionally, WRL has centred on work based learning, involving sandwich courses and placements in which students have time to experience a number of the facets of the workplace. However, many practitioners teach WRL within their institution. To do this requires curricula and associated activities to be designed which mimic or simulate, aspects of the workplace. Within a degree programme, a balance of work-based and non work-based activities can maximise the range of WRL experienced and , consequently, student employability”.
(Hills et al, undated, p. 15)

“...most work-related learning involves the development of knowledge of use in improving present practices or processes for the future. It may even involve knowledge to be used to transform the organisation and lead it to new kinds of activity.”
(Boud, 2001, p. 35)

The use of the term WRL in this way is not helpful, as it confuses the differences between these two kinds of learning. The pedagogy of WBL and WRL is acknowledged as distinct by Hills et al, with WBL including part/full time work and voluntary employment, live projects, placement, and WRL including simulation, role play and case study/history. But as Raelin (2008) emphasises, the pedagogy of WRL does not provide the same opportunities for learners to convert theory into tacit knowledge, learn how to challenge and reflect upon their own theoretical assumptions, defend decisions, assumptions and moral judgements under pressure, and experience the difficulties of obtaining co-operation within a task environment with competing priorities and perspectives. It therefore produces different learning outcomes compared to WBL. These may be valuable in their own right, but their specificity and difference needs to be acknowledged within the context of curriculum and programme planning. Cooper et al (2010) provide a useful differentiation in this context, suggesting that WBL (or work-integrated learning, which is their preferred nomenclature, identified in the forms of professional learning, service learning and
co-operative learning), when part of HE programmes incorporates a number of features: a clear purpose; the workplace as the context of learning; integration of theory and practice; constructive alignment of the work-integrated curriculum; learning via experiential, situated and collaborative processes; partnership approaches between employers and universities; support for students and the workplace. As an example here, volunteer work by itself may not be considered as WBL due to this not being linked necessarily to subject/discipline areas (therefore no chance to reflect on the theory-practice nexus), no support for students in helping to make sense of their learning, and a limited sense of ‘workplace’ (possibly) when engaging with a volunteer role.

An important consideration in this context however is that WBL has been acknowledged as being of utility in helping to bridge the gap between the Academy (universities) and the Workplace (public, private and third sector organisations), (see for example Nixon 2006, CBI/Universities UK 2009, and Sas 2009). If this is the case, an argument can be made for devising and designing WRL experiences for learners that are as close to or as similar as possible to those found within WBL approaches. Raelin (2008) suggests three collective WBL types: action learning, communities of practice and action science. Focusing on the first of these, Raelin suggests a number of key characteristics that lead to genuine WBL outcomes:

1. learners learn collectively by working on and then reflecting on actual ‘actions’ occurring in a real work setting;
2. there is a merger of theoretical principles with an understanding of the social construction of the organisations in which the learners work;
3. real time experience and problems occurring within a work setting, form the substantive subject of learning lesson;
4. feedback focusing on learners’ values and behaviour ensures that actions are seen as positions/points of view with anticipated consequences;
5. learners are forced to find real, workable answers, not easy, hypothetical ones;
6. leadership and teamwork skills are developed along with the more technical skills;
7. there is immediate benefit to the organisation from the learners’ contribution to the project;
8. the lessons learned from the experience tend to stay with the learners longer than if they had learned them from a book or lecture.
9. dissolving problems rather than solving them is the primary focus and outcome.
(Adapted from Raelin, 2008, pp. 84-85)

And Bailey et al (2008) suggest that potential WBL learning outcomes include the following:

a) the cognitive skill of problem formation;
b) flexible modes of problem solution - WBL students often learn that different solutions are sometimes appropriate for the ‘same’ problem;
c) using the environment as part of the problem resolving system – exploit the context creatively;
d) effort saving, which helps with problem definition and the development of skills to solve these;
e) application/adoptions of a variety of forms of representation with respect to problems;
f) cognitive teamwork – outcomes associated with the interplay of inputs from team members;
g) executive functions – autonomy and self-direction;
h) higher order thinking, characteristic of the discipline;
i) understanding social relations within the context of the labour process;
j) exposure/experience of diverse modes of thought;
k) educational institution – work dialectic encouraging new ways of thinking.

It is therefore suggested that if WRL pedagogies incorporate the characteristics and features of WBL experiences as far as possible, then there is a considerable chance that they can generate similar (albeit not identical) learning outcomes, with the underpinning inference that these are of value in bridging the gap between education and the world of work. It is this proposition that will be investigated through research findings with students who participated in the Venture Matrix (VM) activity at Sheffield Hallam University UK.
The Venture Matrix

The VM offers a range of learning opportunities for students: group projects with employers, projects with Sheffield Hallam University as a public sector organisation, mentoring opportunities with school children in the region with the aim of facilitating their enterprise skills, student group projects focused on entrepreneurial activities to identify value adding activities with market potential. In summary, the student group projects engage students in the production of a good or service which can be traded either with other student groups within the VM, clients within the university, or clients outside the university. There is a wide variety of products or services offered by the student groups, which helps to create a vibrant internal market (student group to student group) for VM activities alongside the external possibilities, and a currency/financial framework for measuring the value added by group activities (all groups start out with a financial allowance in a notional currency, are able to supplement this by borrowing from a central bank at advertised rates of interest, and earn extra funds through the internal market which develops for group services provided). The group mechanism and value creation/value adding focus provides a work-related dynamic to the process, which supports participants in the development of employability skills and attributes. Examples of current student groups and their self-stated activities and offers of services provided include:

Cutting Edge Media
“We offer the best service in media. With a team of diverse, experienced, committed, and talented people, we will ensure that our service is a cut above the rest. We do: *Video editing *Photography *Posters *Flyers *Business Cards *Logos *Adverts *Graphic Designs *And much, MUCH more!!”

eXpert Management
‘eXpert Management’ are running a development scheme within local schools in order to effectively encourage young individuals to enhance their sporting development & healthy lifestyle. We require other ventures (research & marketing experts) in order to fulfill this entrepreneurial opportunity. Our venture consists of four entrepreneurs who promote organisation, team working & desire to achieve the best!

Evaluation of the student experience of VM

To gain feedback from students on the nature of their learning experiences within VM a focus group session was organised. Five students participated in this focus group, and the questions were themed around the central characteristics of WBL identified by Raelin and Bailey et al above. The focus group discussion was recorded and transcribed. The transcription was then subject to content analysis to identify key themes that emerged from the student reflections in relation to the organising framework for the discussion that was adopted. The purpose of this approach was to produce data to help evaluate the extent to which the learning experiences and outcomes of their WRL were similar/dissimilar to those identified in the WBL literature, and hence to comment on the extent to which WRL can produce the same kind of experiences and outcomes as WBL. Summary findings from the focus group session are presented below:

<table>
<thead>
<tr>
<th>Characteristics of WBL identified by Raelin and Bailey (see referencing/notation system used above)</th>
<th>Evidence of these within the VM experience of students reported in the focus group discussion</th>
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</thead>
</table>
| 1 6 7 b) f) | “I’d say you do (develop team work skills) because when you get some work from a venture you all have to work together in order to get it done like on time and to the client specification so teamworking gets improved a lot.”
“Just getting on with each other, just recognising each other’s skills and how to use them effectively in the piece of work that you’re doing.” |
| 8 9 e) | “At the time, it doesn’t really feel that you’re learning, you obviously are but you just learn things as you go you might not realise that you’re getting better at things like organisation, teamwork, and all sorts, might not necessarily realise just from doing the VM that you are.”
“It’s like more psychological isn’t it because when you go into a lecture you’re actually going there to concentrate to learn, but when you do the VM jobs you’re actually just there to do the job and get it done as best you can and you don’t have to well you are...” |
| 3 a) | “We just went with the flow to be honest until we actually needed to do some work and then we went for it…”  
“Yeah we didn’t realise like by the time we got to January the 21st when there was a trade fair we still hadn’t got a job we’d been looking but everyone was like we’re Nova finance they’d take our card but no one actually got back to us and then eventually when we’d set our sites on pretty much doing anything we managed to get a job quite easily its just a case of getting in before was there an e mail I think there was an e mail on Bb and I think we must have got in first because we got jobs then I think there was one other group there when we got there two groups but we managed to get the job.”  
“I think the best thing to do is to go into it with an open mind, if you go into it with a one track mind saying we’re only taking this sort of work then you’re not going to do as well…”  
“We really had to adapt to circumstance really” |
|---|---|
| 2 h) j) | “To be honest I didn’t personally use any of the information out of the lectures I mean it was 9 o’clock start so I didn’t turn up or most people who turned up were just sitting there tired out of their minds so to be honest I didn’t really take much in I did take things in especially with some of the speakers that came in but the actual lectures themselves where it was just sitting there going through power points I didn’t actually take in and as a result of that I couldn’t really use it for the VM I just had we had to go with the skills we’ve got and develop from there…”  
“I felt as a first year it was more common sense to get work and work with it, because you can’t really do that much apart from just work for somebody else who has all the ideas and sets it all up for you so its more sort of getting in the right position to get some work.”  
“Thing about our other modules is that they’re not really to do with this so we couldn’t really transfer.” |
| 4 i) | “I think we knew what the outcome had to be but the way we had to get to that outcome was quite open.”  
“I think coz we split like the work up into pieces say I’d do it one way and then someone else in the group would do it another way, we didn’t really have many meetings like sat down together, so we found at the end of one task the work was a bit jumbled up coz we didn’t take it like interpret it right I think I mean if we’d had more meetings maybe we’d have sorted it out more smoother but we tended to…”  
“Like in our group we’re all friends anyway so our communication was quite easy between us.” |
| 5 c) g) k) | “…Like I said I think its about attributes, like knowledge I didn’t have to gain any knowledge I don’t think I gained any knowledge in the end I think its more about personal attributes.”  
“I’d say a mix of three (skills, knowledge and attributes) but mainly the personal attributes because I mean beforehand I wasn’t very good at communicating like speaking to people I don’t know but now I speak to people more confidently and interact better but I think knowledge and skills come into it as well, with the knowledge we did a research task for employability boosters so we researched into the website specifications standard website specs so I did gain a bit of knowledge on that and hopefully I’ll be able to build my own website soon so put all that into practice like the legal side of it and the skills.”  
“…don’t really learn actual knowledge from it more what to actually do in certain situations…” |
Discussion
Participants were unanimous in their belief that the VM experience had helped them develop their teamwork skills. They pointed to the strategies they adopted (dividing up work in relation to personal strengths, and meeting to check progress) and how they had developed confidence in dealing with people in group situations and in their communication skills. They recognised the different nature of what they had learnt through the VM process: although the participants struggled to articulate the nature of the skills/attributes/tacit knowledge they had developed, they made a clear distinction between this and the formal propositional knowledge they gained via class room instruction. They also made reference to the job-relatedness of what they had learnt, emphasising the value-in- use of this knowledge and its inherent link with the process of its creation.

There was evidence of groups having to change their plans and approaches as the year developed, and the accepted need for a flexible mindset in relation to securing opportunities from other VM groups. Individual responsibilities were allocated to individual group members, within a broad timeline, with work from other university modules being prioritised where deemed appropriate.

Participants found it difficult to identify any aspects of theory and knowledge developed in other modules that were drawn upon or transferred into the VM experience. Indeed, this appeared to be the case also with the supporting lectures that formed part of the academic module within which VM was embedded. Furthermore, there were few reflections on personal theories developed via the VM experience, although reference was made to “common sense” and how to get things done in the context of working with other people.

There was reflection on the emerging and organic nature of the task, and the way that participants had responded as the VM experience/process had developed. Some participants commented that the ways in which the groups had undertaken their tasks could have been improved, but there were no insights relating to the nature of individual versus collective viewpoints, the associated dynamic, and the implications for personal understanding. The VM experience as a whole was perceived as consensual within the groups, influenced by friendships, and therefore ‘laid back’, which mediated the experience as a whole.

The participants emphasised the development of personal attributes above skills and knowledge, as a product of the VM experience. There was recognition of the workable and practical nature of their outputs, particularly in relation to the position of their own work vis a vis the contracting VM group. The degree of creativity participants exhibited was seen to be limited as a consequence of undertaking work contracted by other groups. The feeling of being able to respond within situations given associated contingencies was also expressed and identified as a learning outcome of the VM process.

Conclusion
Participants in the focus group session were first year undergraduates. Engagement with the VM occurs in all three levels of their programme, and in different ways. As their programme progresses, the nature of the VM task becomes more complex and demanding. Future research will focus on how their original experiences either change or remain constant in subsequent years. Their reflections so far support the idea that WRL approaches, appropriately constructed, can provide similar experiences and outcomes with respect to WBL. Findings from the focus group suggest that in this instance collective/team/group learning, personal attribute development (communication and team working), being responsive/flexible, defining problems/tasks, experience similar to what happens in organisations/the world of work, and the practical and workable nature of outputs, were aspects identified as part of the VM experience. There was little evidence of the development of personal theories (above ‘common sense’), the application of theory to practice (and subsequent reflection upon its utility), and a broader understanding of the context of the tasks within organisational, cultural and socially constructed relationships.

This poses the question of what “appropriately constructed” WRL opportunities would look like so as to maximise their educational benefit. The conclusions support the notion of authentic learning (Lombardi, 2007), and its implications for the design of learning experiences:

- Real-world relevance
- Ill-defined problem
- Sustained investigation
- Multiple sources and perspectives
- Collaboration
- Reflection (metacognition)
- Interdisciplinary perspective
- Integrated assessment
Multiple interpretations and outcomes

References
Relationships and Partnerships – the key to success: a case study of graduate internships

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**Context**
For those graduates leaving University in 2009, the situation is dire. It is expected that an extra 22,000 will become unemployed shortly after leaving University. This equates to between 35,000 to 40,000 graduates failing to find work out of the 350,000 leaving University with a first degree in 2009 (Shepherd 2009). The economic recession has compounded the situation for graduates searching for work (Paton 2009). Innovative solutions are required to address the situation.

**Objectives**
1. To outline an initial pilot study with Job Centre Plus
2. To demonstrate how the pilot study has facilitated the swift roll out of internship product offerings
3. To examine how marketing theory forms an essential component in creating long term sustainable knowledge based relationships
4. To illustrate the opportunities to expand the relationships into other regions.

**Perspectives**
When HEFC called for Universities to bid for part of a £13.6 fund to support unemployed graduates, speed was of the essence both to respond to the call but equally to secure the appropriate links to approach the unemployed graduate audience (HEFCE 2009). Thames Valley University successfully won funds for 100 internships. The issue was the requirement of delivering these with a 6 month time frame. Previous research on unemployed professionals had already established a network of partnerships with Job Centre Plus (J 2009). This facilitated the rapid marketing of the internships which benefitted both Job Centre Plus, the unemployed graduates and the University. It prompts the question of the extent to which relationships matter in marketing Higher Education.

(Roland T. Rust 2010) advocates that products and services become subservient to the long term relationship with the client representing a mission shift for organisational marketing away from the conventional 'push' to a more sophisticated ‘pull’ approach. This perspective can be aligned to the relationships which have emerged between the various parties involved in the graduate internship initiative.

Of more significance are the multi-dimensional relationships of each element, the interactions which are in play and the overall context. (Elizabeth J Wilson 2010) addresses this issue examining the complex interplay of stakeholder relationships. This paper proposes to redefine the impact of partner relationship marketing in building a conceptual framework for developing sustainable knowledge based relationships capitalising on the role of the intern within regional businesses.

This strategic approach sits firmly with Government strategy to ‘boost strong, sustainable, long term economic growth’ (DIUS 2009)

The practice of nurturing rich and meaningful partner relationships is discussed with practical suggestions for expansion. The added value benefits are outlined in the context of the employer engagement agenda to unlock Britain’s talent (Denham 2008).

**Conclusions**
The paper discusses the value of strategic partnership developments amongst local agencies. It provides practical examples of a model which has enabled the rapid deployment of resources to react to local demand. It is suggested that the relationships between the various stakeholders is likely to have long lasting consequences for the regional economy. An expansion model is proposed to be used at other Higher Education Institutions at a time when both organisations are under pressure to demonstrate cost efficiencies and to generate greater positive regional impact.
References
Allen J (2009). Britain’s Got Talent - Maximizing the talent of unemployed professionals, Thames Valley University.
HEFCE (2009). 8,500 graduate internships available.
Paton, G. (2009). Graduate unemployment 'soars in the recession'.
ENTERPRISE EDUCATION: Can one cap fit all?

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The NESTA Report (2008) suggested that the UK’s global competitiveness hinged on its ability to create business-ready graduates with entrepreneurial skills. It believed that Universities had to embrace business education if they want to appeal to students, offering the entrepreneurship and business courses they increasingly desire. They concluded:

“Inspired, self-confident, talented and enterprising graduates are more likely to found and lead dynamic new ventures and transform any organisation they join or manage. Developing entrepreneurial graduates is therefore essential to our future success”

Based on previous experience with more traditional Business Studies and Enterprise undergraduate programmes but seen as filling a gap in its entrepreneurial provision, Staffordshire University launched a Foundation Degree in Business Start Up in September 2007. The first then of its kind, it was a two year full time programme running over a 48 week academic year rather than the more traditional 36 week model. It was designed specifically for those learners looking to start their own business with the support of the University, whilst at the same time studying for a nationally-recognised qualification. Somewhat then unique in structure and pedagogical approach to enterprise education it was developed as a response against a backdrop of “sameness” seen to be emerging in enterprise (education) undergraduate programmes similar to that observed in the 1960/70s as first the (then) polytechnics and later virtually all Universities embraced Business Studies/Administration degrees to serve what then appeared to be an insatiable demand from companies for (vocational) business graduates. But that employable market has changed significantly today. Though the recent global credit crunch may have exacerbated the trend during what has been a severe economic downturn hitting small and large firms alike, graduate unemployment and opportunities to join large companies was already in decline. Looking at the industrial structure of the UK, the predominance of the large company, except in the public sector, has all but disappeared in significance with regards to graduate employment opportunities. The UK is now an economy whose foundation is based on small firms; it is inevitable that increasing numbers of business and non-business graduates alike will be employed by smaller companies or going it alone or in the company of other like-minded individuals, starting up their own business immediately upon graduating or sometime into the future.

In designing and delivering the FDBS, the team set out to address 4 questions:

[1] “…are we preparing our graduates sufficiently to take their place in smaller firms, in particular starting and sustaining their own businesses?”
[2] “…in doing so, are we preparing then for possible future flexible career change by providing them with apposite transferable skills?”
[3] “…have we recognised in our pedagogy that not all enterprising graduates will necessarily be following a (private-sector) profit-orientated work/life career path, yet not working in the public sector?”
[4] “…and finally, are we, in turn preparing our academics and possibly the University’s structure and culture to deliver what we considered were enterprising programmes such as the FDBS?”

From experiences designing and delivering the Foundation Degree in Business Start Up together with his work on similar projects for the Life Long Learning Network, regional funding agencies (AWM), the Learning Skills Council and other Higher Education institutions as well as international TEMPUS and Leonardo projects, the author will present an objective response to these questions.
An Exploration of the Use of Video Screen Capture Software with Tablet PC and Voice Over in Teaching Concepts in Financial Mathematics

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Abstract: The development costs of many e-learning modules can be a significant hindrance to distance learning. This is particularly the case for mathematically oriented material, where the development or proof of a formula is often of great value in the cognition and establishment of problem solving skills in course participants. This paper describes the preliminary use of video screen capture technology (VSC), incorporating a tablet PC and voice over, in teaching introductory financial mathematics to students in an MBA program. VSC with electronic ink and voice over represents a cost effective method of creating sophisticated e-learning modules for use in distance education and to complement classroom instruction of mathematically oriented material. The experience of the instructor as well as the perceived effectiveness of the VSC modules, on the part of students, is reported. Preliminary evidence of the effectiveness of the modules, based on student performance on relevant test questions, is also examined.

Introduction

Technological tools for aid in course delivery and instruction are advancing rapidly along with the offering of distance education programs. It has been frequently noted, however, that the development cost of many e-learning modules, in terms of technology and instructor time, can be a significant hindrance to distance learning (Johnson & Tang, 2005 and Ottmann et al., 2003). This has been noted particularly in the case of mathematically oriented course material, where instruction regarding the development or proof of a formula is often of great value in terms of cognition and the establishment of problem solving skills in course participants. The traditional pedagogical process is one where the instructor “works out” or proves a formula, or its application, in handwritten steps while simultaneously describing the steps verbally – the “chalk and talk” approach. Course participants typically transcribe the development in a notepad for later study. Although this traditional process appears to be relatively simple, the learning modalities engaged are complex involving auditory, visual and kinaesthetic-like aspects of learning. Unfortunately the electronic replication of such an approach, to date, has been difficult or costly. Alternatives such as the use of Power Point slides and software such as Microsoft Equation Editor, as a substitute for handwriting on the part of the instructor, may be useful in courses which do not involve many typed formulae but are cumbersome for mathematically focused instruction, resulting in higher instructor time and development cost. In addition, with either approach, the student is left with a completed proof in their notebooks or PowerPoint slides, which does not typically allow for a review of the concept development, of the richness that the “chalk-and-talk” process originally entailed. In particular course participants often find it difficult to reconstruct the explanation from written notes or PowerPoint slides. Attempting to replicate the handwritten development, while simultaneously recalling the verbal exposition, may also be particularly difficult for international students who may not be completely fluent in the language of instruction. Video recording of an instructor is also a relatively costly, somewhat awkward and time consuming endeavour.

The advent of tablet PC’s and electronic ink combined with video screen capture (VSC) software, however, allows for the capturing of both visual and auditory components of the development of a mathematical concept or formula, with very simple technological requirements. Course participants can then be provided with a concise and richer form of e-learning objects on course websites for review, than simply their notes or Power Point slides. In addition to providing a verbal exposition in real time as the concept is developed visually, the VSC modules easily allow for stopping and replaying, providing the student the ability to engage the material at a speed and time of their convenience. In terms of mathematically oriented material, this provides for learning opportunities than can, in some sense, surpass that of face-to-face instruction. Indeed a number of recent studies have indicated that learning modules created with VSC and tablet PC technology can be of significant aid in cognition (Folkstad & De Miranda, 2002 and Bonnington et al., 2007), particularly for mathematically based material (Aminifar et al., 2007). Similar benefits have been noted in the use of Flash™ videos for homework solutions (Grinder, 2008).

The teaching of financial mathematics and concepts, in business education, entails many instructional issues similar to those in the fields of mathematics and engineering. This paper discusses the instructor’s experiences in the creation and use of VSC modules for teaching concepts in an introductory financial mathematics course, required as part of a Masters of Business Administration (MBA) program.
VSC Modules
Using a tablet PC with VSC software and headset microphone, VSC modules were created, with electronic ink software (Microsoft Windows Journal), of the proof of two relatively difficult concepts in introductory financial mathematics; that of the formula for the present value of a growing annuity, and the related formula for the pricing of common shares under the assumption of two stages of dividend growth. The instructor’s experience in creating the modules was a relatively positive one with few technical difficulties. A key advantage of the technology is that the instructor derives a mathematical proof or formula in electronic ink using their own handwriting, as opposed to mathematical text software which can frequently be difficult or time consuming to employ. Although the clarity of the instructor’s handwriting may be an issue in some cases, the advantage is that the student may already be familiar with the notation and hand writing of the instructor from in-class instruction. In the case of distance education, handwriting eligibility may be an issue, without accompanying face-to-face instruction.

Screen Capture Software
A number of inexpensive screen capture software programs are available, with a variety of features. The creation of VSC modules of mathematical instruction does not, however, require much in terms of specialized software features. Video screen capture as opposed to only single pictures is an obvious requirement along with the ability to capture sound from the microphone inputs of the tablet PC. The ability to save VSC files in fairly common file formats such as wmv or avi is also a necessity. In the current application the software SNAG IT was employed at a cost of approximately US $100. A number of websites offer comparisons of screen capture software and further exploration into the relative usefulness of different programs, for this specific use, would be of value for the typical user attempting to easily incorporate the technology into their courses.

Voice Over Technology
Voice over was captured using a simple headset microphone, commonly used for internet telephony. Although no concerns were indicated by students with respect to comprehension of the auditory component, the instructor did note the presence of significant “white noise” in the recordings, common with this type of application. The use of USB microphone technology would significantly reduce the presence of such background or white noise and again is fairly cost effective. A variety of USB microphones are available in the range of US $200 or less. An analysis of the suitability of various USB microphones would again be worthwhile.

Population and Data
During the 2009 autumn (September through December) semester the instructor provided VSC modules, relating to two specific financial topics, to 109 course participants enrolled in three different sections of an introductory Corporate Finance course. The course is a mandatory component of the Masters in Business Administration (MBA) degree program at Brock University, Canada. The MBA program at Brock University is offered in two distinct streams; one for those program participants who are native English speakers or, whose fluency in the English language is fairly high, and a second for largely international students whose native language is not English and whose first degree was completed at an institution where the English language was not the basis of instruction. Consequently the opportunity was provided to test the relative value of the SCV modules, for those students experiencing some difficulties with the English language. In total, 30 students were enrolled in the domestic stream section while 79 students were enrolled in two sections representing the international stream.

SCV modules were provided to students for two different but somewhat related concepts. The first concept was the present value of a growing annuity, which has often represented a relatively difficult formulation for students to grasp. It is the formula for calculating the present value of a series of cash flows that is growing at a constant annual growth rate \( g \) for a fixed number of periods \( n \). The first cash flow \( (C_1) \), which occurs at the end of the first year, then grows at the annual growth rate in subsequent years. The present value \( (PV) \) of the total series of cash flows is calculated using a fixed interest or discount rate \( (k) \) and is given by:

\[
PV = \frac{C_1}{k - g} \left( \frac{1 + g}{1 + k} \right)^n
\]

For all three sections of the course, an exposition of the formula was first developed using the “chalk and talk” approach with face-to-face instruction. An SCV module relating to the concept was then provided to course participants for further review and reference, through the course website. Figure 1 provides a screen capture of the VSC module showing the development of the formula.
The second but related concept is known as the two-stage dividend growth model for share valuation. In this model it is assumed that the dividend per share, paid by a firm to its commons shareholders after the first year ($D_1$), grows at a constant growth rate ($g_1$) for a fixed number of years ($n$). Subsequent to the $n^{th}$ period the dividend continues to grow, but at a different growth rate ($g_2$) from the period $n$ onwards. The share valuation ($P$) is found by finding the present value of the assumed dividends at a given discount rate $k$:

$$P = \frac{\frac{D_1}{k}}{1 + k} - \frac{(1 + k)(1 + g_1)}{k} + \frac{(1 + k)(1 + g_2)}{k}$$

The formula is related to the concept of the present value of a growing annuity however it has the added complexity of subsequent cash flows after the $n^{th}$ period. Course participants were provided with two SCV modules as part of a lecture on the related topic of share valuation. The first SCV module outlined the development and intuition of the formula, while the second file provided a numerical example of its use. The difference in this second use of VSC modules was that an in-class exposition of the topic was not provided; students were simply asked to review the concept under self study. In this manner some idea of the relative value of the VSC modules without in-class instruction could be assessed.

Survey of Perceptions of Usefulness of SCV modules

At the end of the course, students in all sections were asked to complete an online survey with respect to the nature of their use of the VSC modules, as well as their perception of the value of the modules for understanding the concepts. Of the 109 class participants a maximum of 84 (77.1%) students participated in the survey; 26 (86.7%) students from the domestic section of the course and 58 (73.4%) students from the two international stream sections. The first two questions on the survey focused on the students’ use of the modules. In particular students were asked whether they viewed the modules more than once as part of their studying, and whether they stopped the modules or replayed sections in order to increase their understanding. Two subsequent questions related to the perceived usefulness of the modules for 1) understanding of the concepts and 2) whether the respondent viewed the modules as having value in achieving a higher course grade. Finally, with respect to the two stage growth dividend valuation model, respondents were asked whether they felt an in-class presentation was necessary given the VSC modules supplied. When the topic was introduced, an in-class exposition was not provided, unlike in the case of the present value of a growing annuity concept.

Table 1 provides a summary of the responses to the survey with respect to the PV of a growing annuity module while Table 2 shows the survey results for to the growing dividend modules. With respect to the concept of a
growing annuity, the majority of respondents (81.3%) viewed the VSC module more than once and stopped and
replayed portions of the video in order to understand the concept (83.8%). Although a greater portion (92.3%) of
domestic class students tended to replay portions of the video than did students in the international class (79.6%) the
difference was not statistically significant at reasonable levels of significance. For all survey questions, Table 1 and
Table 2 provided the Chi-squared statistic and p value. In the case of several questions, the number of respondents
associated with a particular category was less than 5, consequently the Fisher exact test for significance is also
provided.

In terms of perceived value of the video, 86.1% of the respondents agreed or strongly agreed with the
statement that the videos were useful for developing an understanding of the concept and 78.5% agreed or strongly
agreed with the belief that the videos would help them achieve a higher grade in the course. The perceived value for
understanding and grade achievement was stronger (96.1% and 84.6% respectively) among the domestic stream
students than it was for the international stream students (81.1% and 75.5%) however the difference was again not
statistically significant.

Table 1: Survey responses to VSC video on present value of growing annuity concept.

<table>
<thead>
<tr>
<th>Question</th>
<th>Stream Domestic(D)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viewed lesson more than once?</td>
<td>D (26)</td>
<td>80.8% (21)</td>
<td>19.2% (5)</td>
</tr>
<tr>
<td></td>
<td>I (54)</td>
<td>81.5% (44)</td>
<td>18.5% (10)</td>
</tr>
<tr>
<td></td>
<td>Total (80)</td>
<td>81.3% (65)</td>
<td>18.8% (15)</td>
</tr>
<tr>
<td>$\chi^2 = 0.00584$ (p = 0.94), Fisher Exact (p = 1.00)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stopped or replayed portion of the video?</td>
<td>D (26)</td>
<td>92.3% (24)</td>
<td>7.7% (2)</td>
</tr>
<tr>
<td></td>
<td>I (54)</td>
<td>79.6% (43)</td>
<td>20.4% (11)</td>
</tr>
<tr>
<td></td>
<td>Total (80)</td>
<td>83.8% (67)</td>
<td>16.3% (13)</td>
</tr>
<tr>
<td>$\chi^2 = 2.07274$ (p = 0.14), Fisher Exact (p = 0.2037)</td>
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<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Neutral (3)</th>
<th>Agree (4)</th>
<th>Strongly Agree (5)</th>
<th>Avg. Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Useful for understanding</td>
<td>D (26)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>3.8% (1)</td>
<td>42.3% (11)</td>
<td>4.50</td>
</tr>
<tr>
<td></td>
<td>I (53)</td>
<td>3.8% (2)</td>
<td>1.9% (1)</td>
<td>13.2% (7)</td>
<td>39.6% (21)</td>
<td>4.13</td>
</tr>
<tr>
<td></td>
<td>Total (79)</td>
<td>2.5% (2)</td>
<td>1.3% (1)</td>
<td>10.1% (8)</td>
<td>40.5% (32)</td>
<td>4.25</td>
</tr>
<tr>
<td>$\chi^2 = 3.5948$ (p = 0.46), Fisher Exact (p = 0.569)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will help to achieve a higher grade?</td>
<td>D (26)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>15.4% (4)</td>
<td>34.6% (9)</td>
<td>4.35</td>
</tr>
<tr>
<td></td>
<td>I (53)</td>
<td>3.8% (2)</td>
<td>1.9% (1)</td>
<td>18.9% (10)</td>
<td>32.1% (17)</td>
<td>4.09</td>
</tr>
<tr>
<td></td>
<td>Total (79)</td>
<td>2.5% (2)</td>
<td>1.3% (1)</td>
<td>17.7% (14)</td>
<td>32.9% (26)</td>
<td>4.18</td>
</tr>
<tr>
<td>$\chi^2 = 1.792$ (p = 0.774), Fisher Exact(p= 0.940)</td>
<td></td>
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</table>

Similar results were obtained in terms of the VSC modules for the two stage dividend growth valuation model. Table 
2 indicates that 87.5% (83%) of the domestic (international) stream students viewed the modules more than once
with 91.7% (84.9%) stopping or replaying portions of the video. 95.8% (84.9%) of the domestic (international)
stream students agreed or strongly agreed with the statement that the modules were useful for understanding and
91.3% (82.4%) of the domestic (international) stream students agreed or strongly agreed with the statement that the
modules would help them to achieve a higher grade in the course.

Although use and perceived value of the modules among both domestic and international stream students
was high, only 26.1% (26.4) agreed or strongly agreed with the statement that, given the availability of the modules,
an in-class exposition was not required. For all questions, the difference in responses between domestic and
international stream students, was not statistically significant.
Table 2: Survey responses to VSC modules on two stage dividend growth valuation model.

<table>
<thead>
<tr>
<th>Question</th>
<th>Stream Domestic (D)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D (24)</td>
<td>87.5% (21)</td>
<td>12.5% (3)</td>
</tr>
<tr>
<td></td>
<td>I (53)</td>
<td>83.0% (44)</td>
<td>17.0% (9)</td>
</tr>
<tr>
<td></td>
<td>Total (77)</td>
<td>84.4% (65)</td>
<td>15.6% (12)</td>
</tr>
<tr>
<td>Viewed lesson more than once?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stoped or replayed portion of the video?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D (24)</td>
<td>91.7% (22)</td>
<td>8.3% (2)</td>
</tr>
<tr>
<td></td>
<td>I (53)</td>
<td>84.9% (45)</td>
<td>15.1% (8)</td>
</tr>
<tr>
<td></td>
<td>Total (77)</td>
<td>87% (67)</td>
<td>13% (10)</td>
</tr>
<tr>
<td>$\chi^2 = 0.2521 \ (p = 0.62), \text{ Fisher Exact} \ (p = 0.7437)$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Useful for understanding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D (24)</td>
<td>0.0% (0)</td>
<td>4.2% (1)</td>
</tr>
<tr>
<td></td>
<td>I (53)</td>
<td>3.8% (2)</td>
<td>11.3% (6)</td>
</tr>
<tr>
<td></td>
<td>Total (77)</td>
<td>2.0% (2)</td>
<td>9.1% (7)</td>
</tr>
<tr>
<td>$\chi^2 = 0.6682 \ (p = .41), \text{ Fisher Exact} \ (p = 0.7156)$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will help to achieve a higher grade?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D (23)</td>
<td>0.0% (0)</td>
<td>8.7% (2)</td>
</tr>
<tr>
<td></td>
<td>I (51)</td>
<td>3.9% (2)</td>
<td>13.7% (7)</td>
</tr>
<tr>
<td></td>
<td>Total (74)</td>
<td>2.7% (2)</td>
<td>12.2% (9)</td>
</tr>
<tr>
<td>$\chi^2 = 3.341 \ (p = .342), \text{ Fisher Exact} \ (p = 0.433)$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in-class presentation not required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D (23)</td>
<td>8.7% (2)</td>
<td>30.4% (7)</td>
</tr>
<tr>
<td></td>
<td>I (53)</td>
<td>15.1% (8)</td>
<td>34.8% (8)</td>
</tr>
<tr>
<td></td>
<td>Total (76)</td>
<td>13.2% (10)</td>
<td>31.6% (24)</td>
</tr>
<tr>
<td>$\chi^2 = 1.414 \ (p = .702), \text{ Fisher Exact} \ (p = 0.892)$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| In summary, it would appear that there were no differences between international and domestic stream students in terms of this use of the modules and their perceived value. In both cases the survey responses indicated extensive use and high perceived value. The potential of the VSC modules to substitute for in-class instruction was not viewed by the respondents to be high however.

**Students’ suggestions for improvement**

Survey respondents were also asked for suggestions as to how the VSC modules could be improved, if at all. In total, associated with both topic modules, there were 41 respondents to the question, which could be easily categorized into the four topic areas identified in Table 3.

As indicated, the majority (80.5%) of respondents were satisfied with the modules with many (26.8%) suggesting increased use of modules for other topic areas in the course. A small number (14.6%) indicated some improvement on the part of the handwriting of the instructor or use of ink colors. In addition some students using Macintosh based computers, seemed to experience some difficulty in playing the videos. Overall the responses indicate that students were generally satisfied with the modules, and saw little need for improvement.

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Table 3: Responses to question as to how to improve the VSC modules

<table>
<thead>
<tr>
<th>Suggestion Topic</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some improvement in handwriting or colors used in the VSC modules.</td>
<td>6 (14.6%)</td>
</tr>
<tr>
<td>More VSC modules should be used throughout the course.</td>
<td>11 (26.8%)</td>
</tr>
<tr>
<td>Satisfied with the VSC modules.</td>
<td>22 (53.7%)</td>
</tr>
<tr>
<td>Some difficulty in using the modules on a Macintosh computer.</td>
<td>2 (4.9%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>41 (100%)</strong></td>
</tr>
</tbody>
</table>

**Assessment of Student Performance**

Finally an attempt was made to determine whether the availability of the VSC modules resulted in increased student performance in terms of test scores on relevant material. As part of the final comprehensive examination for the course, students were asked to complete a problem based question, heavily focused on the concept of the present value of a growing annuity. This question was identical to one provided on the final examination from the previous year’s (autumn 2008) offering of the course, when the VSC modules were not available to students. Final examinations from previous years are not accessible to students and consequently the 2009 cohort did not have prior access to the exam, or the relevant question. This allowed for a comparison of the relative performance of students, given the availability of the modules.

Using the total student population (2008 and 2009 as well as domestic and international sections) Table 4 provides the results of a regression of relevant question performance (QP) on an indicator variable (VSC) related to whether the student had access to the VSC modules and, the overall grade (G) achieved by a student in the course. The overall grade was included in the regression as Biktomirov and Nilson (2007) find an inverse relationship between GPA and the increased performance of students due to the availability of on-line learning objects. In other words weaker students appeared to benefit more, in terms of improved performance, from the presence of on-line animated learning objects. To be more specific the following regression was tested:

\[
QP_i = \alpha_0 + \alpha_1 VSC_i + \alpha_2 G_i + \varepsilon_i
\]

(1)

where VSC\(_i\) is equal to 1 if student \(i\) was part of the 2009 offering of the course, when the VSC modules were available, 0 otherwise. The regression was also carried out by partitioning the data by the domestic stream versus the international stream students and by low course grade score (\(\leq 70\%\)) versus high course grade score students. The regression results are again provided in Table 4.

Table 4: Results of the regression of relevant exam question performance on VSC module availability and course grade.

<table>
<thead>
<tr>
<th>Student Population</th>
<th>Intercept (t-statistic)</th>
<th>VSC (t-statistic)</th>
<th>G (t-statistic)</th>
<th>Adjusted R(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Students</td>
<td>0.3211 (4.10)*</td>
<td>-0.017 (-0.55)</td>
<td>0.7357 (6.20)*</td>
<td>0.1785</td>
</tr>
<tr>
<td>Domestic Students</td>
<td>0.3262 (1.84)*</td>
<td>0.0259 (0.44)</td>
<td>0.5821 (2.63)*</td>
<td>0.1057</td>
</tr>
<tr>
<td>International Students</td>
<td>0.3236 (3.61)*</td>
<td>-0.0138 (-0.85)</td>
<td>0.7469 (5.43)*</td>
<td>0.1856</td>
</tr>
<tr>
<td>Low score ((G \leq 70%))</td>
<td>0.3983 (3.40)*</td>
<td>-0.0309 (-0.74)</td>
<td>0.5840 (2.94)*</td>
<td>0.0629</td>
</tr>
<tr>
<td>High score ((G &gt; 70%))</td>
<td>0.9603 (4.86)*</td>
<td>0.0098 (0.27)</td>
<td>-0.1215 (-0.49)</td>
<td>0.0048</td>
</tr>
</tbody>
</table>

*Significant at the 5% significance level.

In general the results provided in Table 4 indicate that the availability of the VSC modules was insignificant in explaining students’ performance on the relevant exam question. This was true for either the domestic or
international stream students, or whether the students had a low or high course grade. The overall grade in the course was significant in explaining relevant question performance except in the case of students who scored relatively high (G > 70%) in the course overall.

Although these preliminary results would indicate an insignificant impact of the VSC modules in terms of performance the results are to some extent inconclusive. We do not, for example, have a direct measure of how extensively an individual student reviewed the modules or found them helpful and the relationship of this measure to their ultimate score on the test question. Optimally a test of greater control would be required to determine any effect of the modules on cognition and examination performance. Overall however, the use of, and perception of the value of the modules, was relatively high among both domestic and international students.

Conclusions
Video screen capture with electronic ink and voice over provides a cost effective and time efficient method for instructors of mathematically related material to create on-line learning modules either for supporting face-to-face instruction or for distance education courses. The VSC modules allow for the development of a mathematical formula or proof much as it would be done in traditional face-to-face instruction.

VSC modules designed to help in the understanding of complex mathematical formulae were provided to students in a required introductory corporate finance course in the MBA program at Brock University, Canada. Although student’s perceived the value of the modules, in terms of comprehension and improved grade performance to be high, preliminary results would suggest that the availability of the videos was not significant in affecting the grade achievement of students. This was true for both domestic and international students in the program. These results are somewhat preliminary however and a more rigorous test controlling for specific such as the use of the modules by the student is required, before valid conclusions can be drawn. As well, the views of students did not support the hypothesis that VSC modules could effectively replace face-to-face or interactive instruction.

Finally the literature on multiple intelligences and its potential impact on learning has received a lot of attention over the past 25 years since the original work of Gardner (1983). Gardner defines eight “intelligences” (linguistic, musical, bodily-kinesthetic, spatial, interpersonal, logical-mathematical, intrapersonal, naturalist) that are linked to learning styles or the manner in which information is best delivered for comprehension and retention by the individual. In addition most individuals do not exhibit a single intelligence but often exhibit a primary and secondary. Although the theory is not without its critics (see for example Waterhouse, 2006) it represents an approach to learning styles that is often applied in many educational settings. The relationship of learning styles or intelligences to the effectiveness and perceived value of VSC modules would therefore be of interest.

References
Blended Learning in Econometrics. Crossing borders between Learning and Doing

Ana Jesús López Menéndez, Rigoberto Pérez Suárez, University of Oviedo, Department of Applied Economics, anaj@uniovi.es, rigo@uniovi.es

Abstract: The new Economics and Business Degrees adapted to the European Higher Education Area (EHEA) must face the challenge of training individuals capable of analyzing and interpreting the functioning of the economy improving the well-being of the society. Therefore, Econometrics should be considered as a strategic tool which is narrowly related with some main competences such as information management, problem solving or decision-making. In this paper we summarize our experiences based in Blended Learning, which provide several interesting findings, based on both students’ and teachers’ opinions. We have experienced that doing Econometrics is a good way of learning Econometrics, as it proves the teamwork developed with Gretl, which has shown to be a suitable, user-friendly, flexible, open-source and accurate software. Furthermore, according to students online surveys, blended learning provides outstanding advantages in the achievement of competences as problem solving, applying knowledge in practice, computing and information management and teamwork.

The role of Econometrics
The design and implementation of new University Degrees adapted to the European Higher Education Area (EHEA) offers the opportunity of exploring new ways of teaching and learning, emphasizing the role of the students in the learning process. In this context, the new Economics and Business Degrees must face the challenge of training individuals capable of analyzing and interpreting the functioning of the economy, thus improving the well-being of the society with the achievement of equity and efficiency.

A concrete approach to implement the Bologna Process is offered by the project “Tuning Educational Structures in Europe”, which provides a methodology to re-design, develop, implement and evaluate studies. Furthermore Tuning serves as a platform for developing reference points at subject area level, which are relevant for making programmes of study comparable and compatible.

According to this approach, reference points are expressed in terms of learning outcomes and competences. Learning outcomes are statements of what a learner is expected to know, understand and be able to demonstrate after a learning experience, while competences represent a dynamic combination of cognitive and meta-cognitive skills, knowledge and understanding, interpersonal, intellectual and practical skills, and ethical values.

Generic competences can be classified into three types: instrumental competences (including cognitive, methodological, technological and linguistic abilities), interpersonal competences (regarding social interaction and co-operation) and systemic competences (understood as a combination of understanding, sensibility and knowledge). Furthermore, Tuning acknowledges the importance of building-up and developing subject specific competences as the basis for university degree programmes.

In the framework of the Tuning project two large scale surveys were organized in 2002 and 2008 among academics, graduates, students and employers, leading to different rankings of the generic competences. The results of both surveys are not strictly comparable since students were not included on the 2002 consultation and the questionnaire was slightly modified. Nevertheless, the results of the 2008 survey – based on 7087 responses and summarized in table 1- show greater agreement concerning the ranking of the top five generic competences than in the 2002 survey.

As it can be seen in table 1, the rankings on the top four by employers, graduates and students were exactly in the same order, and just slightly different from academics’ rankings. The only significant difference on the top five rankings is that employers and students give a high priority to the competence “ability to work in team” (5th place) while academics rank this competence in the eleventh position.
Regarding the lower ranked competences, the most outstanding difference is that employers place “ability to work in an international context” in 28th place, well below the rankings of academics, graduates and students.

Table 1: Rankings of generic competences according to Academics, Graduates, Students and Employers

<table>
<thead>
<tr>
<th>Generic Competence</th>
<th>Academics</th>
<th>Graduates</th>
<th>Students</th>
<th>Employers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability for abstract thinking, analysis and reasoning</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Ability to apply knowledge in practical situations</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Knowledge &amp; understanding of the subject area &amp; understanding of the profession</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Ability to identify, pose and solve problems</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Capacity to learn and to stay up to-date with learning</td>
<td>5</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Capacity to generate new ideas (Creativity)</td>
<td>6</td>
<td>9</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Ability to be critical or self-critical</td>
<td>7</td>
<td>11</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td>Ability to communicate both orally and in writing in native language</td>
<td>8</td>
<td>12</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Ability to search for, process and analyse information from a variety of sources</td>
<td>9</td>
<td>8</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Ability to undertake research at an appropriate level</td>
<td>10</td>
<td>15</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>Ability to work in a team</td>
<td>11</td>
<td>7</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Interpersonal and interaction skills</td>
<td>12</td>
<td>14</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Ability to work autonomously</td>
<td>13</td>
<td>17</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>Ability to plan and manage time</td>
<td>16</td>
<td>10</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Ability to adapt to and act in new situations</td>
<td>15</td>
<td>10</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Ability to make reasoned decisions</td>
<td>16</td>
<td>13</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>Ability to act on the basis of ethical reasoning</td>
<td>17</td>
<td>25</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>Ability to communicate in a second language</td>
<td>18</td>
<td>16</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>Skills in the use of Information and Communication Technologies</td>
<td>19</td>
<td>20</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>Ability to motivate people and move toward common goals</td>
<td>20</td>
<td>19</td>
<td>17</td>
<td>13</td>
</tr>
<tr>
<td>Ability to work in an international context</td>
<td>21</td>
<td>23</td>
<td>21</td>
<td>28</td>
</tr>
<tr>
<td>Determination &amp; perseverance in the tasks given &amp; responsibilities taken</td>
<td>22</td>
<td>21</td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td>Ability to evaluate and maintain the quality of work produced</td>
<td>23</td>
<td>24</td>
<td>24</td>
<td>21</td>
</tr>
<tr>
<td>Ability to act with social responsibility and civic awareness</td>
<td>24</td>
<td>27</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Ability to design and manage projects</td>
<td>25</td>
<td>18</td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td>Appreciation of and respect for diversity and multi-culturality</td>
<td>26</td>
<td>28</td>
<td>26</td>
<td>31</td>
</tr>
<tr>
<td>Ability to communicate with non-experts in</td>
<td>22</td>
<td>26</td>
<td>29</td>
<td>26</td>
</tr>
<tr>
<td>one’s field</td>
<td>28</td>
<td>29</td>
<td>28</td>
<td>30</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Commitment to the conservation of the environment</td>
<td>29</td>
<td>22</td>
<td>25</td>
<td>17</td>
</tr>
<tr>
<td>Spirit of enterprise, ability to take initiative</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>Commitment to safety</td>
<td>31</td>
<td>31</td>
<td>31</td>
<td>29</td>
</tr>
<tr>
<td>Ability to show awareness of equal opportunities &amp; gender issues</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>25</td>
</tr>
</tbody>
</table>

Source: Tuning Project, 2008

There is a wide agreement about the need to adapt the students’ knowledge and capacities to the labour market requirements, trying to attenuate the existing distance between the perceptions of academics and employers. More specifically, in the case of the Economics and Business degrees students should achieve competences as “to use analytical instruments in the decision-making processes” or “to handle information technologies”, aspects in which Econometrics is expected to play an outstanding role.

In the previously described context, and following the main guidelines of the Bologna process, we have adopted a “learning by doing” approach in Econometrics, leading to a more realistic methodology, which is characterized by an intensive use of blended learning and Gretl, as we will briefly describe in the next sections.

**Strategic tools: Blended Learning and Gretl**

Blended Learning provides a suitable procedure for combining different learning styles thus improving the acquisition of competences and skills. Our blended learning experiences in Econometrics at the University of Oviedo (Department of Applied Economics) started almost a decade ago, since the virtual campus AulaNet provided us with “blended” virtual facilities as a complement of our physical resources.

Although the “learning by doing” approach has been adopted from the very beginning, this methodology has been progressively adapted to the facilities provided by the virtual campus AulaNet, which started in 1999 as a self-developed platform, moving in 2002 to WebCT and then in 2006 to Moodle.

Furthermore, Google Docs is currently used as a basic tool for the elaboration of contents, since it guarantees the standardization of formats, solving the compatibility problems when using different operating systems (Windows, Mac, Linux) or different programs (OpenOffice, MsOffice 2003 and 2007) which could affect the view of presentations and equations. Additional advantages of Google Docs are the easy update of contents and the facilities for collaborative work.

Regarding the practical sessions in the computing room, after some years experiencing with Eviews we moved to the open-source software Gretl, which provides clear advantages for students, mainly referred to the free access and the educational characteristics.

In general terms, the available physical and virtual resources are combined with the aim of achieving the relevant competences, as it is summarized in table 2.
<table>
<thead>
<tr>
<th>Teaching-learning Resources</th>
<th>Physical Resources</th>
<th>Virtual Facilities</th>
<th>Competences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical Sessions</td>
<td>2 h/week (Groups of 50 students)</td>
<td>Online Presentations, documents and references</td>
<td>Ability for abstract thinking, analysis and reasoning Capacity to learn and to stay up-to-date with learning</td>
</tr>
<tr>
<td>Practical Sessions in Classroom</td>
<td>1 h/week (Groups of 50 students)</td>
<td>Online solved and proposed exercises</td>
<td>Ability to apply knowledge in practical situations Ability to identify, pose and solve problems</td>
</tr>
<tr>
<td>Computer Sessions with Gretl</td>
<td>1 h/week (Groups of 25 students)</td>
<td>Online materials: databases, workfiles, manuals</td>
<td>Skills in the use of Information and Communication Technologies Ability to communicate in a second language Ability to make reasoned decisions</td>
</tr>
<tr>
<td>TeamWork with Gretl</td>
<td>Groups 3-4 students Tutorials Oral expositions (10 min)</td>
<td>Virtual proposal Online forums &amp; tutorials Practical guide Attachment of the final report workfiles</td>
<td>Capacity to generate new ideas (Creativity) Ability to be critical or self-critical Ability to communicate both orally and in writing in native language Ability to search for, process and analyse information from a variety of sources Ability to undertake research at an appropriate level Ability to work in a team Interpersonal and interaction skills Ability to plan and manage time Ability to act on the basis of ethical reasoning</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Continuous assessment Final exam</td>
<td>Online self-assessment Common mistakes</td>
<td>Knowledge &amp; understanding of the subject area Ability to work autonomously</td>
</tr>
</tbody>
</table>

Gretl (acronym for Gnu Regression, Econometrics and Time-series Library) is free open-source software with an easy intuitive interface, allowing different ways of working from interactive point-and-click to batch processing. This flexibility is one of the most outstanding characteristics of Gretl, which includes a wide variety of menu facilities, also offering a “console” where users can type commands recorded as a batch file, and a “session” option, which provides an iconic space containing several objects as data sets, model tables, scalars, graphs, … , allowing users to store a complete dossier of the whole developed work.

According to our experience, these facilities of Gretl are very useful since they allow students to re-build specific results, emphasizing the autonomous work and leading to a better understanding of the main econometric concepts and techniques.

Gretl is also used in the teamwork which is closely related with some main competences as “ability to search for, process and analyze information from a variety of sources”, “creativity”, “ability to undertake research at an appropriate level” amongst others.

Communication tools play an outstanding role in the teaching-learning process, since they can be very helpful in the achievement of competences as “ability to work in a team”, “critical or self-critical capacity”, or “ability to communicate both orally and in writing”. Our blended learning experiences include an intensive use of e-mail, forum, chat and also some additional facilities as wikis or cooperative tools in Google. A more detailed description of the role of some communication facilities is included in the following section.
Crossing borders between Learning and Doing

Listening to the student voice is important in the achievement of a real European Higher Education Area. With this aim, the “Bologna with Student Eyes” report (BWSE) provides useful information based on perceptions of the national student unions. More specifically, the fourth report published in 2009 detects several problems: the European Credit Transfer System (ECTS) does not fully reflect students’ workload, learning outcomes are sometimes poorly understood, students are not regarded as equal partners by higher education institutions and stakeholders, and therefore much greater action on these aspects should be taken over the next years.

Our experiences with Econometrics have tried to be coherent with the student-centered learning approach and therefore main efforts have been made with the aim of crossing borders between learning and doing Econometrics.

As we have previously said, a key point in this process is the teamwork, which provides our students with the opportunity to work with real information, thus becoming familiar with the main problems of econometric modeling and forecasting. In order to make this work attractive students are allowed to choose their workmates and their topic, and they have free access to the software Gretl and some useful online materials (User’s manual, FAQ section, practical guidelines, …).

The development of teamwork is supervised and assessed from the initial proposal until the final report and with this aim a specific forum is created for each group, including its 3-4 members and the professor. In this way, students can easily organize themselves, ask and answer questions, attach workfiles, … and teachers have access to an extremely useful information in order to evaluate not only the final result, but also the learning process.

With the aim of sharing experiences, oral expositions of the teamwork are scheduled along the semester and, since these presentations take place at different development stages, further debate is emphasized through wikis, trying to develop critical and self-critical abilities, whose achievement is quite difficult.

Regarding the evaluation, we have tried to be coherent with the teaching-learning process by combining the continuous evaluation and the final exam. More specifically, the teamwork has a weight of 30%, while the final examination weights 50% and the remaining 20% corresponds to monthly assessment questions, collected in theoretical, practical and computed sessions, being the last one an online self-evaluation.

The application of the described methodology and evaluation system has improved our academic results, leading to satisfactory indicators whose evolution is summarized in table 3. In general terms the rates of efficiency in Econometrics are higher than the averages registered in our Department and our Faculty and the proportion of students achieving high marks (“Notable” and “Sobresaliente” have increased during the last years).

Table 3: Econometrics Academic Indicators.

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>% Presented Students</th>
<th>% Passed Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-2000</td>
<td>73%</td>
<td>87%</td>
</tr>
<tr>
<td>2000-2001</td>
<td>76%</td>
<td>76%</td>
</tr>
<tr>
<td>2001-2002</td>
<td>74%</td>
<td>71%</td>
</tr>
<tr>
<td>2002-2003</td>
<td>75,60%</td>
<td>74,40%</td>
</tr>
<tr>
<td>2003-2004</td>
<td>72%</td>
<td>72%</td>
</tr>
<tr>
<td>2004-2005</td>
<td>77%</td>
<td>77%</td>
</tr>
<tr>
<td>2005-2006</td>
<td>68%</td>
<td>80%</td>
</tr>
<tr>
<td>2006-2007</td>
<td>73%</td>
<td>80%</td>
</tr>
<tr>
<td>2007-2008</td>
<td>79%</td>
<td>88%</td>
</tr>
<tr>
<td>2008-2009</td>
<td>83%</td>
<td>85%</td>
</tr>
<tr>
<td>2009-2010</td>
<td>80%</td>
<td>72%</td>
</tr>
</tbody>
</table>

In order to know if we succeed in our proposal of crossing borders between learning and doing we have collected students’ opinions through online surveys, which can be easily implemented in the virtual campus AulaNet. During the last academic years students have been asked to provide information about their personal effort, the perceived difficulty of the educational contents and the acquired competences and skills. A scheme of the Econometrics survey is shown in table 4.
Table 4: Online Survey for Econometric Students.

<table>
<thead>
<tr>
<th>Contents</th>
<th>Quantitative Aspects</th>
<th>Qualitative Aspects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours of personal work</td>
<td>Perceived difficulty for each item</td>
</tr>
<tr>
<td>Team Work</td>
<td>Hours or work for different stages: database building, model estimation, hypotheses testing, forecasting, oral exposition, final report</td>
<td>Perceived difficulty for the team work, Satisfaction with Gretl facilities, Comparison of personal and team effort, Quality of the work compared with others</td>
</tr>
<tr>
<td>Assessment</td>
<td></td>
<td>Perceived difficulty of assessment questions, Satisfaction with the assessment system</td>
</tr>
<tr>
<td>General</td>
<td></td>
<td>Level of satisfaction, Opinion about competences achievement, Comments and suggestions</td>
</tr>
</tbody>
</table>

Although the rate of response is quite low (50%), the obtained information shows some interesting facts. Regarding the estimated personal workload, although our results could be affected by some “prestige bias”, the most outstanding fact is the heterogeneity of students, reflected in the high dispersion which leads to non-representative means and should be considered when designing and implementing the learning methodology.

On the other side, a high degree of homogeneity is found in the perceived levels of difficulty (approached by the percentages of students whose answers to the proposed questions are “difficult” or “very difficult”) and also in the level of agreement with the achieved competences and skills (approached by the percentage of students answering “Total agree” or “Agree”). Besides, since these online surveys have been carried out along several academic years we can also confirm the stability of the obtained results.

Table 5: Online Survey Results.

<table>
<thead>
<tr>
<th>Sections</th>
<th>Level of difficulty (% of students answering “high” or “very high” difficulty)</th>
<th>Level of agreement (% of students answering “total” or “high” agreement)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical Sessions</td>
<td>30%</td>
<td>46%</td>
</tr>
<tr>
<td>Practical Sessions</td>
<td>10%</td>
<td>60%</td>
</tr>
<tr>
<td>TeamWork with Gretl</td>
<td>35%</td>
<td>65%</td>
</tr>
<tr>
<td>Continuous Evaluation</td>
<td>7%</td>
<td>71%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>21%</td>
<td>57%</td>
</tr>
</tbody>
</table>
Regarding students’ opinions about competences and learning outcomes, our results show that students mainly appreciate the achievement of competences as information management skills, computing skills and problem solving. Teamwork is also appreciated as a valuable although rather hard competence.

The lower positions correspond to the oral and writing communication abilities and the critical and self-critical capacity, competences whose achievement should be emphasized during the last years.

Concluding Remarks

Almost eighty years ago Joseph Schumpeter claimed in his famous work “The common sense in Econometrics”, that every economist is an econometrician since data should be used as a complement of economic theories. Since then the role of Econometrics in Economics and Business degrees has gradually increased including not only the study of the main techniques for the estimation and testing of econometric models but also a more realistic approach, which is often based on the use of econometric software.

In this context, our experiences in the teaching-learning process of Econometrics during the last years provide some conclusions and reflections of interest for the implementation of the new Economics and Business degrees in the framework of the European Higher Education Area (EHEA).

According to these experiences, blended learning is a suitable procedure for combining different learning styles thus improving the acquisition of competences and skills. Furthermore, the user-friendly open-source software Gretl has shown clear advantages for students, mainly referred to its free access, its flexibility and its adequacy for autonomous work, allowing a better understanding of the main econometric concepts and techniques.

Following the “learning by doing” approach, our students are required to participate in a teamwork based on real economic data and developed along the semester in 3-4 students groups. This work includes the search of information, an oral exposition, further debates through forum and wikis and a final report, and is included in the evaluation with a weight of 30%, while the final exam weights 50% and the remaining 20% corresponds to the continuous assessment questions.

With the aim of accessing students’ opinions about different aspects as personal effort, perceived difficulty or achieved competences, online surveys are collected each year, leading to some interesting results. In general terms, a high degree of dispersion appears in the declared times of work while the perceived levels of difficult are quite homogenous.

Regarding the competences, students mainly appreciate information management, Gretl use and problem solving, while teamwork is considered both useful and difficult.

Ten years after the Bologna declaration, the obtained results should be kept in mind for the next implementation of the new Economics and Business degrees. So far, our experiences have detected both weak and strong points, showing that, as professors, we also learn by doing.
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Technology Enhanced Support for Remedial Maths: Addressing the Needs of Heterogeneous Cohorts of Specialist Engineering Students

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Abstract: Cranfield University at the Defence Academy of the UK, provides post-graduate and non-degree bearing courses for selected tri-service personnel. These are undertaken as mid-career technological updates and require a specific level of mathematical ability. An e-assessment diagnostic test is used to identify knowledge gaps and provide formative feedback. The test reflects student cohort heterogeneity and identifies weaker students who are shown to struggle in other subject areas due to lower mathematical ability. Instead of developing conceptual understanding of maths, these students become fixated on “facts” assumed to guarantee passing the exam required to progress with their course. Technology enhanced learning (TEL) interventions are proposed for augmenting face-to-face remedial activities. Student learning through group-work using GeoGebra and with peer-to-peer support is proposed for further evaluation. The interactive geometry and algebra visualisation software allows them to see the results of using direct mathematical input to complete a designated task. A process model for combining TEL interventions with e-assessment is presented.

Introduction

Many professional development and higher education programmes require learners to have a minimum level of mathematical ability in order to successfully complete the programme. Often these programmes require a similar capability across several disciplines. These programmes are frequently delivered in a full time mode and the students are expected to achieve a similar capability in physics and chemistry. Any remedial programme has to be well thought out taking into account lack of time for any further intervention to address shortfalls in any discipline. Where this is the case it can have a detrimental effect on learners’ performance as they struggle to catch up with the other topics. The remedial programme need also take into consideration the heterogeneity that normally exists. The heterogeneity manifests itself in two ways, namely prior educational qualifications where the learners are not exposed to subject matter, and the skills fade caused by prolonged gaps in education.

The paper addresses this challenge by describing an approach being taken at the Defence Academy of the United Kingdom in the context of a post graduate programme for Ammunition Technical Officers. The approach consists of implementing two remedial activities; i) e-assessment generating diagnostic formative feedback and ii) technology enhanced learning (TEL) support tools to clarify fundamental concepts. Since the remedial programme is delivered over a short period of time, it is impractical to provide detailed one-to-one support. The current practice is to deliver a diagnostic test using the Maple T.A. (a web-based test and assessment system) on day one to identify the students abilities, followed by 24 contact hours that include lectures and tutorials where the learners work through a set of exercises followed by a 90 minute written examination. Those students who do not meet the pass criteria, currently 60%, are offered a re-sit examination after an elapsed time of 30 days. During this period those students are offered further tutorial assistance once a week augmented by structured exercises. While students support each other during the tutorial sessions, weaker students tend to prepare for the examination, rather than addressing their gaps in the knowledge or consolidating the essential skills that they need. It is proposed to enhance group working using the software tool Geogebra that combines geometry and algebra that offers visualization and interactive dynamic content in an elegant way. This tool is also less demanding on mathematical input, and provides students many opportunities for peer-to-peer support.

The paper presents a detailed process model for combining technology enhanced interventions together with e-assessment. It is also proposed to evaluate the model formally with a view to inform the selection process and develop appropriate pre-course work packages. It is organised as follows. First we describe the context of the paper and the course and students we are working with. The second section provides an account of our current practice with respect to an introductory module and the observations which motivated the proposed intervention. In the third section we discuss technological issues regarding the tools we have opted to use before finally concluding with examples of the learning activities we intend to provide and a process model showing how they will fit into the existing module. We also comment on some organisational issues and possible obstacles.
Ammunition Technical Officers
The Royal Logistic Corps (RLC) is one of the largest in the British army. RLC personnel can be found working with and operating alongside all regiments as they manage the flow of resources from start to end. Specialist logistics roles include that of the Ammunition Technical Officers (ATO) who is responsible for managing, maintaining and disposing ammunition. ATOs work includes the design and inspection of ammunition storage sites and the disposal of unexploded ordnance and improvised explosive devices (IEDs). The ATO course is aimed at educating and training selected junior officers up to the rank of captain to become ATOs. It is run in two phases the first of which runs for 22 weeks at the Defence Academy of the United Kingdom – College of Management and Technology (DA-CMT) and is delivered in partnership with Cranfield University. The second phase which is conducted at the Defence EOD Munitions Search School lasts for nine months. There is one cohort per year of no more than 20 students.

Phase one of the course is presented in several modules which are designed to progressively develop students’ knowledge from the general level to the highly specific. Students are expected to be able to apply this knowledge in all taught subject areas. These subject areas are underpinned by the disciplines of physics and chemistry which in turn require a base level of knowledge and ability in mathematics.

During the four week of the introductory studies module students are taught the fundamentals of science. What they are taught underpins and supports the remainder of the course. Before progressing with the course students are assessed in general chemistry, thermal physics and waves to ensure they have attained a common basic level in science. The introductory studies include a maths diagnostic test, tuition and an assessment which students must pass. During the DA-CMT phase the students sit 14 key exams which, with double and triple weighting on key subject area assessments, equate to 18 exams. They are deemed to have failed the phase overall if they fail to achieve an average of 60% in all modules including maths. If a student fails a module exam they have the opportunity to re-sit the exam at the end of the module using a different paper. Irrespective of performance a maximum mark of 60% only is possible for a re-sit. Current practice with respect to the introductory module maths elements only is described in the next section.

Current Practice
The maths revision is delivered up-front in a block of 22+2 contact periods starting with a diagnostic test which is followed by a set of conventional lectures. If they fail the maths exam in week three, they are offered a resit in week 17 which they are expected to pass. The current situation is modelled in Figure 1.

The diagnostic test is delivered using the Maple T.A. suite of components which, together, form an online system for creating tests and assignments. The suite comprises a web server, content server and transaction router. Users access tests or the authoring environment via a web browser. At its core is the Maple mathematics engine; a symbolic computation or computer algebra system which is capable of manipulating information in a symbolic or algebraic manner (Heal, 2000). Maple’s symbolic engine allows teachers to develop question items which take into consideration the combinations of possible correct responses students may make when entering algebraic expressions.

Figure 1. Introductory module maths assessment and total contact periods of 50 minutes for each subject.
Entering mathematical expressions is a major challenge for some students. Many do not fully appreciate the difference between \( t = (v-u)/a \) and \( t = v-u/a \). This is one manifestation of *mal-rules* (Sleeman, 1984) or ‘uniform applications of incorrect or inappropriate transformations’ (Jurkovic, 2001, p. 197). In this case, the application of the mal-rule is partly influenced by calculator usage.

The students’ performance in final exams is clearly dependent upon their mathematical knowledge. The data set shown in Figure 2 consists of four years of cohorts representing a total of 76 students. The graph shows the marks in the assessment for the DA-CMT phase. The concentration of students who obtained 60% in the final maths is an artefact of the data set of student results which only recorded the mark obtained in re-sit exams (capped at 60%) and not the original fail mark. The mark at 45 is a historical artifact where it has been condoned rather than capped. The general trend is clearly visible at 95% confidence levels.

**Figure 2. Dependency of performance on mathematical knowledge in final exams. Maths scores are shown on the x axis and average scores in other subjects are shown on the y axis.**

Based on the above observation, we propose to change the process with the January 2011 cohort by introducing carefully chosen interventions. Some of these interventions include additional practice exercises in Maple T.A. to address specific deficiencies in the diagnostic test and group exercises based in a computer laboratory.

If a student is found deficient in manipulating algebraic fractions, she will be provided with additional exercises using the templates shown in Column 3 of Table 1 shown at Appendix A. These templates will be used to algorithmically generate test items in Maple T.A. The text of an algorithmically generated problem corresponding to the skill set FRAC_NUMERICAL_1 (see Table 1) is shown below as it appears in the system view of Maple T.A.

How this is rendered visually in a web browser is shown in Figure 3. Note the text entry box for mathematical input.

```plaintext
$f=range(2,8);
g=range(2,8);
condition: ne($f,$g);
$ans=maple("simplify((1+1/($f))/(1-1/($g))) ");
```
Figure 3. Mixed fractions with assumed denominator 1 consistently causes concern to many students. Students may enter the result in either symbolic mode or simple text entry. The interface allows the students to preview their result before submitting their responses.

Technologies for Learning Maths

Developments in digital technology usage provide learners with new ways to build and apply their mathematical understanding and studies have shown that the use of technology can help learners to conceptualise mathematical problems. Indeed, it has been reported that investigating digital environments can lead to improved high-level reasoning and problem solving (Sacristán et al., 2010, p. 183). The probability of learners attaining these levels of understanding is increased if their interactions with the digital environment are provided with timely and accurate feedback (see, for example, Biggs 2003; Rowntree 1987; Laurillard 2002; Black et al. 2003). Miller & Upton (2007) report on their work on the design, development and implementation of mathlets, small mathematical online learning objects (Lester, n.d.). Their research into building and deploying dynamic computer applets for use in the teaching and learning of introductory mathematics in higher education provides a useful starting point for others intending to incorporate mathlets in their teaching. Not least of the conclusions drawn by Miller and Upton is that the tools helped motivate struggling students. They also point out that although they can be used effectively for conceptual learning such tools are not necessarily universally accepted by students despite their perceived benefits. Mathlets should be aesthetically designed and simple and convenient for students to use. They work best in highly structured activities although, in smaller groups, they are suitable for discovery learning. In terms of designing activities for smaller groups, this latter point brings to the fore the advantages of peer-to-peer discussion made by M. David Merrill:

Peer discussion promotes opportunities for learners to discuss a given portrayal with one another to determine whether or not it is a good representation of the information; that is, is this example really an example of a kind of x? Does this specific execution of a procedure really involve each of the steps in the statement of the procedure? Does this consequence really follow from the conditions that have been identified for a specific process? (Merrill, 2009, p. 47)

Sangwin et al. (2010) indicate that due to significant technical advances and because interactions can be logged by the underlying system, some dynamic computer applets which are used for onscreen manipulations are also suitable for computer aided assessment (CAA or e-assessment). Suffice to say, free visual manipulation of objects in response to structured assessment questions is a considerable leap forward for e-assessment which currently relies heavily on multiple choice type and similar items which are mostly constrained to eliciting knowledge of a topic rather than deeper understanding.

GeoGebra

GeoGebra (www.geogebra.org) is an example of an advanced mathlet. It is an open-source interactive geometry software written in Java and as such can run on different platforms or as an applet within a web-browser. Using different views, tools and text based direct mathematical input within the interface users are able to construct and manipulate representations of mathematical objects. It has both a dynamic geometry system and computer algebraic system. Learning activities can be designed to take advantage of these features and engage users in challenging and highly visual activities to consolidate their maths knowledge to solve problems in algebra, geometry and calculus (Sangwin, 2007).

We have already stressed that learning activities and assessments work best when timely feedback is provided. This can be done either by the tutor or automatically by the system with which the students are interacting. In addition to allowing for feedback, a key feature of a well designed learning activity is that it is relevant both to the
students’ learning and context (Laurillard, 2002; Ramsden, 2003; Biggs & Tang, 2007). It follows, therefore, that learning and assessment tasks should be written in such a way that the student can draw upon more abstract ideas and apply them to a problem which they might encounter in real-life. As Ramsden (2003, p.65) remarks, deeper approaches to learning are closely linked to the value students place upon tasks. By making assessment and learning tasks relevant, students are likely to see how they can be applied within their own context and therefore place more value upon them.

**Concluding Remarks**

GeoGebra is ideally suited to engage the students in group activities to reinforce the basic concepts and also the computer notation of mathematical expressions. An example of a typical exercise, using the Geogebra sineplot in Figure 4, is illustrated below:

Explore the solutions of the following equations in the interval [0, 2π].

(a) \(\sin(x) = 0.25\)
(b) \(\sin(2x) = 0.25\)
(c) \(\sin(2x+\pi/3) = 0.25\)
(d) \(\sin(x/2) = 0.25\)

It is advantageous to show the units on x-axis as multiples of \(\pi\). Observe the number of solutions of the above equations in the desired intervals. Are the peaks related to the factor 2 in the expression \(\sin(2x)\)? What are the solutions of the equations \(\sin(2x) = 1\)?

Figure 4. Geogebra sineplot exercise. Students can explore the exercise problem by manipulating the objects and observing results.

Figure 5 shows an exercise based on an area bounded by curves. Given the task of finding the area bounded by the curves \(y = x^2\) and \(y = \sqrt{x}\) many students find determining the limits of integration that are obtained by solving the equation \(\sqrt{x} = x^2\); squaring both sides they observe \(x = x^4\);

\[x^4 - x = x(x^3 - 1) = 0;\]

… and immediately jump to the solution \(x = 1\), and miss out on the solution \(x=0\). The aim of the group exercise is to provide additional visual support to discussions about rectify potential misunderstandings in sketching the graphs correctly or setting up the equations to find the limits of integration or identifying the required area they needed to compute.
In paper based tutorial sessions graphing generally takes time and students are reluctant to fully engage with the process of depicting them reasonably well. This is where technology can help us to break this barrier by introducing several carefully structured questions that provide rich visual feedback and bring the significance of various parameters to life. See Figure 5’s Sineplot where the students can discuss the influence of the parameter under question.

![Figure 5. Area under curve for students to explore](image)

With effect from January 2011 these and other technology enhanced learning (TEL) activities will be incorporated within the introductory module maths programme. Analysis of the results from the online Maple T.A. diagnostic test will be used to generate feedback for the students which will guide them through additional, remedial, algorithmically generated exercises which they can attempt as many times as required. Their weaker areas and remedial training requirements will be matched against the taxonomical structure of the maths knowledge base holding the algorithm templates. At each step, feedback against the taxonomical structure will pinpoint learning paths. Mal-rule usage identified by the online diagnostic test will provide staff with feedback to inform their approaches to the group exercises. The mal-rules themselves will not be explicitly explained to the students to avoid any further misconceptions developing. Where possible, materials will be provided for students to use during the period between selection and joining the course. Data on results and activity participation will be collected and analysed to inform further development of the proposed process model shown in Figure 6. Further improvements to the use of technology in these and similar interventions will have to take into account the limitations of the organization which are briefly discussed below.
Organisational and Other Issues

When introducing technological interventions in new or existing programmes it is inevitable that various obstacles will be encountered. In the case of the proposed interventions in the ATO Course introductory maths module, there are several technological obstacles. The computer equipment and network infrastructure belongs to the Ministry of Defence and as such is controlled by necessarily restrictive policies and procedures. A case is being made for installing Geogebra applets in preference to running them in the browser. This will require security accreditation and approval and the cooperation of support staff in the IT Department. Teaching staff will have to be familiarised with the software both functionally and as a teaching tool and students will have to be trained in its use. However, we are confident that thanks to its ease of use, this should not take an unreasonable amount of time. With regard to using software and calculators for maths input, experience tells us there is a considerable amount of work needed to familiarise many students with the various methods available; if they are struggling with maths in the first instance, their performance is further impeded by the need to understand keyboard text entry and equation editors.

The situation we have described and our motivation for designing a TEL intervention is but a first step in a series of developmental activities we are planning for the ATO course with the intention of improving the learning experience for the students and their mathematical abilities. By doing so, we hope to equip them with a deeper and more alive understanding of maths and its role not just in their studies but also in their everyday lives.

References


Appendix A

Table 1: Abbreviated section of a taxonomy table for maths topics, sub-topics and templates showing fairly indicative (but not exhaustive) examples.

<table>
<thead>
<tr>
<th>Serial</th>
<th>Topic</th>
<th>Sub-topic/skill required</th>
<th>Example/Problem template</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Arithmeti</td>
<td>Numbers</td>
<td>Evaluate 45/5/3</td>
</tr>
<tr>
<td></td>
<td>ARITH_EVAL</td>
<td>Arithmetic precedence, BODMAS</td>
<td>Sort the numbers ( \frac{1}{1-\sqrt{2}}, e, \pi, \sqrt{\frac{3}{7}} ) in increasing order of magnitude</td>
</tr>
<tr>
<td></td>
<td>_1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FRAC_NUMERIC</td>
<td>Fractions</td>
<td>Evaluate ( \frac{1}{a + \frac{1}{b + \frac{1}{c}}} )</td>
</tr>
<tr>
<td></td>
<td>_1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Algebra</td>
<td>Factorization</td>
<td>( x^2 - (a+b)x + ab ); ( x^4 - a^4 ); ( x^3 - a^3 ), ( a \in {-3,-2,-1,1,2,3} )</td>
</tr>
<tr>
<td></td>
<td>ALG_FRACT</td>
<td>Algebraic Fractions</td>
<td>Distinguish A/(x-2) vs A/x-2; ( \frac{A}{(x-2)} vs \frac{A}{x} )</td>
</tr>
<tr>
<td></td>
<td>_1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Transform of formulae | Adding and subtracting a quantity on both sides; Raising to a power both sides; Taking square root on both sides; Exponentiate both sides; Reciprocate both sides; Taking logs on both sides | \[
c = f \lambda; \quad \frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2} \quad T = T_0 e^{-\alpha t}
\]
| Combine into a single fraction | \[
\frac{A}{x-2} + \frac{B}{x-1}
\]
| Terms across equal to sign; Re-arrange and simplify | \[
\frac{A}{x-2} = \frac{B}{x+3}
\]
| Mixed algebraic - Number plus algebraic | \[
A + \frac{B}{x+1}
\]
| Mixed algebraic - Fraction plus algebraic | \[
\frac{A}{B} + \frac{C}{x-1}
\]
| Mixed algebraic - Number plus algebraic with coefficients \(A + B/(2x-1)\) | \[
A + \frac{B}{2x-1}
\]
| Mixed algebraic - Number plus algebraic; opening brackets in the denominator | \[
\frac{A}{B} + \frac{C}{2(x-1)}
\]
| Monomial plus fraction \(x + \frac{A}{x+3}\) | \[
x + \frac{A}{x+3}
\]
| Divide the fraction to individual terms | \[
\frac{x^3 + 4x - 1}{2x}
\]
Ethical Competence: the Roles and Responsibility of the Business and Management Higher Education Sector

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In the UK general progress had been made toward increasingly integrated risk management activity under the principles-based implementation of the Combined Code on Corporate Governance, which has also transferred readily into public sector discourse and implementation. Small scale pilot research and consideration of the governance and risk management literature however suggest a danger that risk management may be perceived as merely a procedural issue, rather than a systematic one, particularly by middle managers. How risk assessment and management is conceptualised becomes critical therefore and opens the door for the business higher education sector to help managers understand both the dangers and the philosophical nature of the broader framework. We propose a model, based on a whole- systems approach to change where:

• the engagement of management groups with risk becomes active and holistic rather than passively procedural,
and
• the potential for principles-based embedding of risk management into normal and on-going operations is enhanced.

This will build on the work suggested at EDINEB 16, and presented at the British Academy of Management (2009), where the debate around how business educators might convey the seriousness of such systemic responsibility to students and managers was introduced. The business and management HE sector now carries a degree of responsibility for the future ethical and authoritative practice of the professionals they develop and ‘license’ for the wider world. This session will explore what might work best in an era where Business Schools in particular may be deemed to have failed the challenge to generate ethically competent and risk aware managers.
Corporate Diversity Engagement meets Business School Diversity Initiatives: Initial Observations

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Abstract: Diversity and equal opportunity are social and political issues which have been at the heart of French contemporary debate since the beginning of the 2000s. Companies, universities, business and engineering schools are being closely observed regarding their selection and recruitment procedures and as a result have taken action to foster pluralism and promote social justice through diversity. In this paper, we first of all define diversity in general, then the diversity discourse in France, prior to analyzing the corporate diversity engagement of the 40 signatory companies of the Diversity Charter. The aim is to ascertain the types of diversity actions reported and communicated by these companies and how theses initiatives or actions serve the business student.

Introduction
French society has generated some discrimination in recent history and is now attempting to restore certain republican values such as ‘Liberty, Equality, Fraternity’ and re-conceptualize their status as a country of Human Rights. Diversity and equal opportunity are social and political issues which have been at the heart of French contemporary debate since the beginning of the 2000s. Companies, universities, business and engineering schools are being closely observed regarding their selection and recruitment procedures and, as a result, have taken action to foster pluralism and promote social justice through diversity. This decade-old interest in diversity and equal opportunity manifests itself in a plethora of actions, written reports and social initiatives.

In this paper we will first of all discuss the diversity discourse and explain how it has been legitimated by reports, charters, and labels as well as the work of a group of social entrepreneurs with the aim of promoting greater social justice. This journey will take us from an initial definition of diversity, through its acceptance in contemporary French society to finally end up at its current social, political and economic usage. We will first of all highlight the types of diversity initiatives that companies engage in and then reflect on how these initiatives can serve the business student or graduate. From a corporate point of view, we will analyze diversity issues whereas from a business school point of view, the term normally employed is ouverture sociale (literally social openness, which refers to the capacity to include and integrate students from diverse backgrounds into their establishments). In order to contain the analysis, we set about analyzing the original 40 signatories of the Diversity Charter (2004) in order to take a photograph of the diversity initiatives that they report and communicate on after 6 years of diversity engagement. However, prior to setting out the initiatives, we will first of all discuss diversity in general and diversity in France.

Diversity and diversity in France

Diversity
Diversity and equal opportunity have become major societal questions in the past decade in France and the French are being asked to think about these concepts in relation to school, work and society. France, with its motto of “Liberty, equality, fraternity” has finally begun to put diversity at the heart of its essence. However, prior to 2000 when France signed up to the UN Global Compact, which called on businesses to adopt sustainable and socially responsible policies, France had a very poor record regarding diversity and equal opportunity initiatives and actions in companies. In the last decade, the term “diversity” has been transformed from being a fact that was politely

ignored to a concept that is seeping into all aspects of corporate and school life and is translated via governmental reports and commission documents, laws and actions.

While this paper does not permit an extensive analysis of all aspects of diversity, we feel it is important to say something about two terms that are often associated with this concept, namely alterity and equality. Alterity, coined by Lévinas (1999[1970]), expresses the philosophical idea of otherness with the idea that we can engage with the other or flee. Alterity, therefore, refers to otherness and the recognition of the other in his/her difference and is strongly linked in the consciousness to the relation one has to others as different individuals and who must be respected in their right to be themselves and different. It is evidence of an understanding of the particularity of each individual outside all normalization. Equality, on the other hand, as one of the elements of the motto “Liberty, equality, Fraternity”, is more difficult to apprehend in today’s society with economic inequality being part and parcel of most western countries and especially in France (Minc, 1994; Maurin & Savidan, 2007). In France, a commission directed by an economist, Minc (1994) published a report “La France de l’an 2000” (France in the year 2000) in which he states that the answer to the issue of inequality is equity. We should no longer look for equality but equity between individuals. Therefore, diversity is associated with the idea of embracing the other as we are all equal and we must strive to achieve a fair society for all.

Diversity is a concept which is poorly defined in the literature at both national and international level. Here, we will set down three definitions of diversity: a European definition (1); two UK definitions (2) and (3); and a French definition (4), and then reflect on these in order to tease out a working definition of diversity.

1) “Diversity is one of the founding principles of the European Union and was one of the driving forces behind the process of European integration. It refers to a set of conscious practices which acknowledge and tolerate difference. Today, the values of the European Union promote a better public understanding of the benefits of diversity and the fight against discrimination in society. The European Commission’s key objectives are to prevent people from being discriminated against in any way due to their racial or ethnic origin, religion or belief, disability, age or sexual orientation” (EU website2; 2010).

2) “Valuing everyone as individuals – as employees, customers and clients” (CIPD 20103).

3) “People are not alike. Everyone is different. Diversity therefore consists of visible and non-visible factors, which include personal characteristics such as background, culture, personality and work-style in addition to the characteristics that are protected under discrimination legislation in terms of race, disability, gender, religion and belief, sexual orientation and age.” (CIPD, 2010).

4) Diversity, when applied to the company, designates the variety of human profiles, which exist within the company (nationality, regional, from suburbs, patronymic, culture, age, gender, physical appearance, disability, sexual orientation, qualifications, etc. The list is not exhaustive). (Diversity Charter, 2004).

In the European definition, there is an emphasis on conscious practices to acknowledge and tolerate difference, the definition assumes that there are benefits of diversity without explicitly stating them, and it links diversity to discriminatory factors in society. The definition finally outlines five types of difference: racial and ethnic origin; religion/belief; disability; age; and sexual orientation. The UK’s Chartered Institute of Personnel and Development (CIPD) short definition focuses on valuing the individual and also uses difference as a key factor of their definition but refers to visible and non-visible differences. In the UK definition as well as the five types of difference outlined in the European Union definition, they include gender and four other personal characteristics: background; culture; personality; and work style, bringing their total to ten. In the French definition as set down in the Diversity Charter (2004), eleven types of difference are set down with physical appearance, qualifications, name/surname and nationality being added to the list. In the French definition, it is interesting to note that religion/belief is not mentioned at all and ethnic and racial origin is not cited directly but only through name and nationality, which would usually be indicators of race and ethnic diversity. Therefore, from these definitions, diversity designates difference and non-discrimination in society and includes twelve types of difference: race and ethnic origin; religion and belief;


3 CIPD – Chartered Institute of Personnel and Development
http://www.cipd.co.uk/subjects/dvsequil/general/divover.htm?IsSrchRes=1
disability; age; sexual orientation; social origin; culture; gender; physical appearance; nationality; name; and educational qualifications. Having looked at diversity in general, we will now turn to diversity in France in the next section.

Diversity in France

For a long time French companies were indifferent to diversity issues and the struggle against discrimination. In the past decade or so and especially since 2004, this has all changed. Some major events since 2004 have called on companies to implement recruitment policies and diversity and non-discrimination can no longer be politely ignored in French corporate environments. Diversity entered the French public domain with the publication of a report under the auspices of the Montaigne Institute entitled ‘Les oubliés de l’égalité des chances’ (Overlooked by Equal Opportunity) (Sabeg & Méhaignerie, 2004), which raises awareness of discriminatory practices in French society and puts forward concrete propositions in three areas (namely in the workplace, at school and in urban politics) to tackle discrimination. This report led to the “Diversity within Business Charter” and was later published as a book (Sabeg & Méhaignerie, 2006). 40 companies signed up to the initial Diversity Charter in 2004. This Charter is a text of engagement offered to any company, whatever its size, who condemns all types of discrimination in employment and who decides to work towards a policy of diversity within their organization. A General Secretariat of the Diversity Charter was set up in 2005 in order to implement the promotion of the Charter nationally in collaboration with private and public partners of the Charter. The Secretariat distributes information to companies, catalogues best practice and centralizes the signatories of the Charter. The charter specifically asks companies to reflect the diversity of French society in their recruitment practices. The diversity charter specifically states that it was initiated “to foster pluralism and promote diversity in recruitment and career management with the aim of helping companies become more efficient and contribute to the quality of their social relations. This charter has a positive effect on the corporate image vis-à-vis their clients, their external partners and consumers in France and worldwide” (Diversity Charter, 2004).

Based on 6 articles, it guides the company towards the implementation of new practices by including all its partners and collaborators. It incites them to implement a human resource management policy centered on the recognition and development of individual competencies. The company also promises to foster social and equal cohesion. The six articles of the Charter are as follows:

1. Raise awareness and train management and collaborators implicated in the recruitment, training and management of people and their careers on non-discrimination and diversity issues.
2. Respect and promote the principle of non-discrimination in all forms and in all stages of human resource management and notably in recruitment, training, professional promotion of all collaborators.
3. Seek to reflect the diversity of the French society and especially its cultural and ethnic diversity in employment at different levels of qualification.
4. Communicate the corporate involvement in favor of non-discrimination and diversity to all employees and inform them of the practical outcomes of this involvement.
5. Render the elaboration and implementation of this diversity policy an object of dialogue with staff representatives.
6. Include a descriptive chapter of their involvement in non-discrimination and diversity in the annual report to include actions implemented, practices and results.

Those who signed up to this Charter undertook to reflect the social, cultural and ethnic make-up of French society in their workforce and render non-discrimination and diversity an integral part of their corporate strategy within human resource management. However, one of the problems with this Charter as stated by Broussillon et al (2008) is that it “provided no regulatory control in the matter [of diversity] due to its non-binding and declarative character” as the signatories were at liberty to understand and take action in favor of diversity in any way they liked. One positive outcome of the Charter is that it triggered a public debate and led to many other actions and initiatives such as governmental reports; the creation of an authority to deal with discrimination actions; and the better understanding and further enactment of laws dealing with discrimination. Each of these will be discussed in turn below.

Governmental commissioned reports
As well as the Sabeg & Méhaignerie report (2004), two other reports, the Bébéar report (2004) and the Bodin (2007) report were instrumental in bringing diversity into the public domain. The Bébéar (2004; 2009) report was entitled Des Entreprises aux couleurs de la France (Companies in the Colors of France) and was commissioned by the French Prime Minister and comprised a series of operational measures to tackle discrimination of ‘visible minorities’ in companies and in the education system. The report more specifically provides 21 concrete propositions to aid corporate France in curbing discrimination at three levels: within the company; at a local level and by creating greater partnerships with educational actors. Within the company, the report proposes that issues are dealt with by increased awareness raising and training of staff; by making recruitment more objective by using tools such as the anonymous CV, respecting the legal requirements and carrying out surveys into perceptions and feelings of discrimination as well as testing diversity within the company. At a local level, the report espouses greater inclusion of those who are excluded by getting involved in actions that give people a second chance at attaining qualifications and training, and creating greater proximity between the companies and the local environment. The report also calls for the creation of partnerships with educational establishments in order to help pupils discover corporate and professional life; the creation of internship contracts; the provision of financial aid, the systematic publishing of results on diversity partnerships; and the integrate of discrimination and diversity training into the core curricula of management and HR training.

The Bodin (2007) report demonstrated statistically the persistence of social inequality with regard to access to certain elite programs of study, which causes the author to question the capacity of the education system to help academically-inclined socially disadvantaged students. An alarming statistic is that at the beginning of the 1950s, 29% of students came from disadvantaged areas compared to 9% in 2007. This coupled with the fact that 54% of students in preparatory schools come from well-off families and a child from a well-off background is 20 times more likely to go to a Grandes Ecoles (business or engineering school) than a working class child, points to weak diversity due to social origin. The report studies the initiatives undertaken in the past few years to curb this problem and puts forward propositions on how to remedy this lack of representation by a certain percentage of French society. The report sets down three main reasons why students from disadvantaged backgrounds do not benefit from this elite education, namely 1) a phenomenon of self-censorship, which is both socio-cultural and psychological as the students believe that the preparatory school and Grandes Ecoles are not for them, which is also linked to a lack of information and orientation; 2) financial handicap due to the high cost of elite higher education (fees, accommodation, examination registration, ancillary costs of studying, etc.); and 3) territorial inequality concerning access to preparatory schools as certain suburbs and rural areas do not have preparatory schools in the near vicinity. The report outlines 12 propositions on how to deal with this lack of diversity in preparatory schools and as a consequence in Grandes Ecoles, which includes more information on these types of schools; better orientation; propositions on demystifying these schools; tutoring; grant-aid; pegging fees onto family incomes; providing accommodation and measuring and evaluating progress; creating synergies and increasing mobility between different training options.

Creation of an independent non-discrimination authority

In 2004, the HALDE (Haute Autorité de Lutte contre les Discriminations et pour l’Égalité – The High Authority in the Struggle against Discrimination and for Equality4) was created, an independent administrative authority, which has the right to judge all discrimination (both direct and indirect discrimination) that is prohibited by law. The HALDE was set up by the law no 2004-1486 on December 30, 2004 (Law HALDE, 2004). In April 2010, Jeanette Bougrab was nominated president of the HALDE following a controversy over racist remarks made by the UMP (Union for a Popular Movement – French right-wing party) senator Gerard Longuet, who stated that Malek Boutih, the former head of SOS Racism, a French anti-racist NGO, was not a part of the “traditional French body”.

Enactment of anti-discrimination laws

Four laws, which deal specifically with diversity issues, have seen the light of day since 2000. These laws deal specifically with discrimination; disability; equal opportunity; and the employment of seniors. Firstly, the Loi sur la discrimination (Law Discrimination, 2001) was adopted to prevent discrimination in the workplace. The legislation added new prohibited grounds of discrimination (physical appearance, surname, age and sexual orientation); adjusted

4 HALDE Website: http://www.halde.fr/
the burden of proof in discrimination cases, which is now shared equally between the employee and the employer; and make it easier to bring a case to court. Secondly, the Loi pour l’égalité des droits et des chances, pour la participation et pour la citoyenneté des personnes handicapée (Law for equal rights and opportunity, participation and citizenship of the disabled) of 11 February 2005 provided a definition of disability, and reiterated the fundamental rights of the disabled under various themes such as their integration into the workplace; the right to compensation, resources, schooling, employment, accessibility, citizenship and participation in social life as well as other miscellaneous issues (Law Disability, 2005). Thirdly, the enactment of the Loi sur l’égalité des chances (Law Equal Opportunity, 2006), which relates mostly to employment and education, was an answer to the civil unrest in the French suburbs in autumn 2005. The most controversial aspect of the law was the first employment contract (contrat première embauche – CPE), which was rescinded afterwards due to massive protests by students groups. This law covers apprenticeships in companies from the age of 14; the creation of a national agency for social cohesion and equal opportunity (ANCSEC – Agence nationale pour la cohesion sociale et l’égalité des chances); extended power given to the HALDE (see above); the creation of preparatory classes to enter business and engineering schools in disadvantaged areas; and many other legal initiatives. And finally, the law of 17 December 2008 on the financing of social security for 2009 (Law Social Security, 2008) has obliged all companies with more than 50 employees to implement action plans to employ seniors as of 1 January 2010. Failure to comply with this law will lead to a fine of 1% of the corporate wage bill. As regards gender diversity, the Loi Génisson (Law Génisson, 2001) has provided legal provision for professional equality between women and men, the Charté de la Parentalité (Parents Charter, 2008) has provided some protection within the workplace regarding the rights and protection of parents and the Label Egalité Professionelle (Professional Equality Label, 2004) has awarded companies who respect professional equality between genders.

A further turning point came when Nicolas Sarkozy (2008) gave a speech on diversity and non-discrimination and outlined the successes and progress of diversity in France in the recent years as well as announcing the nomination of Yazid Sabeg as the Commissioner of Diversity and Equal Opportunity. Another milestone in diversity management came in 2008 with the creation of the diversity label certified by AFNOR (Association Française de Normalisation – French Standardisation Association) and ANDRH (Association Nationale des Directeurs des Ressources Humaines – National Association of Human Resource Directors) and attesting to the corporate engagement in non-discrimination, equal opportunity and promotion of diversity in human resource management. The label is given for a period of three years and follows an evaluation in five areas: inventory of actions; diversity policy; internal communication; activities within the company and areas that require improvement. Since 2009, 90 companies have been awarded the diversity label. For a more complete list of diversity milestones in France, please refer to Annex 1 at the end of this paper.

Therefore, since the early 2000s, France has witnessed what Fassin (2002) has described as the “French invention of discrimination” (p. 403) and has embraced diversity and non-discrimination policy via a plethora of reports carried out by social entrepreneurs such as Bébear and Sabeg; through legislation into disability, equal opportunity in the workplace, protection of older employees; the creation of an anti-discrimination body (the HALDE); and the nomination of a Commissioner on Diversity and Equal Opportunity and a diversity charter and labels. Bereni (2009) sees social diversity as having undergone a discursive shift in France over the past few years from a judicial constraint (i.e. from an anti-discrimination law perspective) to a managerial category with the main idea being that diversity is good for business. She believes that this new diversity discourse has three main dimensions in corporate France: 1) Strategic adaptability to a new economic environment and more diverse globalised world and hence the need to have a diverse workforce to understand the needs of different clients; 2) Rationalization of human resource performance, whereby discrimination is presented as an obstacle to the selection of competent individuals; 3) Socially responsible investment via education for occupational insertion and social integration. This shift she understands as the result of a mobilization effort by diversity entrepreneurs (she cites Claude Bébear & Yazid Sabeg as two examples) whose professional position predispose them to promote social justice through a market lens. This explains the flurry of diversity rhetoric in French companies tied to a managerial objective and as a consequence within business education institutions. But what types of diversity initiatives do companies get involved in and how can these initiatives serve business graduates? This is the question we would like to address in this study.
Corporate Diversity Engagement

Bearing in mind that the concept of diversity has taken on a new élan in the past decade with a plethora of commission documents, legal provision and charters and guidelines on how to manage diversity in your company, we decided to investigate those companies who originally signed up to the Diversity Charter in 2004 in order to ascertain what types of initiatives they espouse. We assumed that being the first companies to sign up, then they were committed to the issue of diversity and equal opportunity and they have had six years to get involved in diversity actions within their company. Our two research questions are:

1) What types of corporate diversity engagement initiatives are the initial signatories of the Diversity Charter involved in?
2) How do these initiatives serve business school students and graduates?

In order to answer these questions and get a photograph of the diversity engagement of the 40 signatories of the diversity charter, we carried out a comprehensive website analysis of these companies. By using the keywords diversity, equal opportunity, discrimination, and corporate social responsibility, a detailed analysis of the documents provided on the websites was carried out. This enabled us to see what types of initiatives and actions the companies report and communicate on. Essentially, the authors put themselves in the shoes of a business graduate interested in the types of diversity initiatives carried out by the companies that they are potentially interested in. The 40 companies are spread over a number of sectors to include recruitment, auditing, finance, automobile, transport, publishing, IT, among others, with many being household names in France and abroad. The aim here was to compile an exhaustive list of the different types of corporate diversity initiatives carried out by these companies and categorize them into a typology of initiatives based on the different types of difference as outlined in our original working definition of diversity.

However, prior to outlining the typology, we will provide some interesting preliminary findings. 9 out of the 40 companies studied did not report or communicate on any diversity issues, initiatives or actions on their website whatsoever, and 11 companies had been awarded the diversity label certification for their contribution to diversity in their companies. 2 out of the 40 companies report an identified diversity manager employed by the company, who, while being clearly mentioned and identified on their website, is only mentioned in passing but the company did not have a targeted communication on who they are, what they have achieved, etc. One other company mentioned having a diversity manager but did not cite the person’s name, while the others, even those who have a diversity manager or similar post within their company, do not make any reference to this function at all. Regarding the website positioning of diversity actions and initiatives, 18 companies out of 31 position diversity information under recruitment/careers; 5 have a direct link to a press communiqué, the Diversity Charter or press release; 3 position diversity under social responsibility; 3 under company information (alluding to values, philosophy); and 3 under sustainable development.

Of the remaining 31 companies who did communicate on their diversity actions and initiatives, a categorization was compiled and set down under three major headings: 1) in/visible minorities; 2) equal access; and 3) awareness-raising. The term “in/visible minorities" to refer to all those who are discriminated against due to visible features: age; sex; race; etc and invisible features: religion; sexual orientation, etc. Equal access refers to those initiatives that involve aiding selection and recruitment and ensuring equal opportunity. Awareness-raising involves actions to train and increase awareness on diversity issues within the company.

CORPORATE DIVERSITY ACTIONS

1. IN/VISIBLE MINORITIES

Disability

<table>
<thead>
<tr>
<th>Mission Handicap (5, 15, 27, 36)</th>
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<tbody>
<tr>
<td>Occupational integration of disabled (1, 11, 16, 21)</td>
</tr>
</tbody>
</table>

5 The terms invisible and visible minorities are rather problematic as it implies an inherent racism by usage alone. However, we have decided to use the term as a categorization title as it is the most appropriate to capture all.

6 Mission Handicap was created in April 1994 in order to encourage disabled students to study by taking their special needs into account. (website: http://www.missionhandicap.com/).
Internal company agreements/guides/recruitment plans (12, 18, 40)
Collaboration with external organizations such as Agefiph\(^7\), Adapt\(^8\), Fagerh\(^9\), Cap emploi\(^10\) (3, 9)
Collaboration with disabled recruitment agencies (8, 21)
Awareness-raising through disability events (19)

**Social/Racial Integration**

<table>
<thead>
<tr>
<th>Plan Espoir Banlieues(^11)</th>
<th>(9, 16, 17, 39)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutoring</td>
<td>(17, 18, 39)</td>
</tr>
<tr>
<td>Occupational insertion of young people</td>
<td>(3, 29, 30, 35, 36, 39)</td>
</tr>
<tr>
<td>Occupational insertion of young graduates</td>
<td>(39)</td>
</tr>
<tr>
<td>Awareness-raising through theatre</td>
<td>(36)</td>
</tr>
<tr>
<td>European EQUAL program(^12)</td>
<td>(16)</td>
</tr>
<tr>
<td>AVERROES(^13)</td>
<td>(15)</td>
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</tbody>
</table>

**Gender**

<table>
<thead>
<tr>
<th>Charté de Parentalité(^14)</th>
<th>(9, 40)</th>
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</thead>
<tbody>
<tr>
<td>Agreements on male/female parity</td>
<td>(10, 28, 34, 40)</td>
</tr>
<tr>
<td>Professional Equality Label(^15)</td>
<td>(31, 40)</td>
</tr>
<tr>
<td>Feminization of workforce</td>
<td>(35, 36)</td>
</tr>
<tr>
<td>Management coaching of female executives</td>
<td>(9, 21)</td>
</tr>
<tr>
<td>Networking initiatives</td>
<td>(18, 21)</td>
</tr>
<tr>
<td>Female business graduates</td>
<td>(37)</td>
</tr>
</tbody>
</table>

**Age**

| Seniors | (36) |

\(^7\) AGEFIPH - Association de gestion du fonds pour l'insertion professionnelle des personnes handicapées – Association for the fund management for occupational insertion of the disabled. (Website: [http://www.agefiph.fr/index.php?nav1=accueil](http://www.agefiph.fr/index.php?nav1=accueil)).

\(^8\) ADAPT – Association pour l'insertion professionnelle et sociale des personnes handicapées – Association for the professional and social insertion of the disabled. (Website: [http://www.ladapt.net/](http://www.ladapt.net/)).

\(^9\) FAGERH - Fédération des associations gestionnaires et des établissements de réadaptation pour handicapés. Federation of associations and rehabilitation establishments for the disabled. (Website: [http://www.fagerh.fr/](http://www.fagerh.fr/)).

\(^10\) Cap Emploi – Agency to foster the recruitment of the disabled in companies. (Website: [http://www.capemploi.net/](http://www.capemploi.net/)).

\(^11\) Plan Espoir Banlieues (Plan for the suburbs) – A project launched on 8 February 2008 by Fadela Amara, Secretary of State for Urban Politics, to foster access to employment; improve education system; open up the suburbs by providing adequate transportation; reinforce security and renovate accommodation. Website: [http://www.ville.gouv.fr/](http://www.ville.gouv.fr/)

\(^12\) EQUAL European Programme has the mission to promote a better model for working life by fighting discrimination and exclusion on the basis of gender, racial or ethnic origin, religion or belief, disability, age or sexual orientation. (Website: [http://ec.europa.eu/employment_social/equal/index_en.cfm](http://ec.europa.eu/employment_social/equal/index_en.cfm)).

\(^13\) AVERROES (Action Visant l’Égalité sans distinction de Race, de Religion ou d’Origine dans l’Emploi et les Services – Action aimed at equality with distinction of race, religion or origin in employment and services). Website: [http://www.ismcorum.org/averroes-M5-R46.html](http://www.ismcorum.org/averroes-M5-R46.html)

\(^14\) Charté de la Parentalité (Parents Charter) – A charter to protect parents in the workplace, which was set up on 11 April 2008. (Website: [http://www.observatoire-parentalite.com/la-charte.html](http://www.observatoire-parentalite.com/la-charte.html)).

\(^15\) Label Equalité Professionnelle (Professional Equality Label) – Created in 2005, this certification is awarded to companies that respect professional equality between women and men. (Website: [http://www.afnor.org/certification/lbh002](http://www.afnor.org/certification/lbh002)).
**Discussion of Results**

As mentioned earlier, the diversity initiatives and actions communicated by the 31 companies fall under three main categories: *invisible minorities*, which has five subcategories (disability; social/racial integration; gender; age; and sexual orientation); *equal access* initiatives dealing mainly with recruitment issues to prevent discrimination in the selection process; and *awareness-raising* actions comprising internal training and awareness of diversity issues for staff and HR managers. If we look simply at the number of actions, by far the most actions concern internal training on diversity followed by social and racial integration actions, recruitment/selection initiatives, then disability, gender, and finally age and sexual orientation. It is necessary to observe these categories more carefully to really understand how companies communicate on their diversity actions.

1. **In/visible Minorities**

Five sub-categories are subsumed under this heading: disability; social/racial integration; gender; age and sexual orientation. As regards disability, 16 companies have communicated on disability actions mainly dealing with collaboration with external organizations and associations without specially stating the types of actions they were involved in. When I write ‘occupational integration of the disabled’, then this is exactly what is written in the company website without stipulating what types of actions, the percentage of those involved, whether this project is widespread in the company or isolated to a particular type of function or company unit. In general, the actions reported remain extremely vague as follows:

<table>
<thead>
<tr>
<th>Sexual Orientation</th>
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<tbody>
<tr>
<td>GLBT (Gay, Lesbian, Bisexual and Transgender) Network</td>
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<table>
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<tr>
<th>**2. ** EQUAL ACCESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recruitment/Selection</td>
</tr>
<tr>
<td>Anonymous CV</td>
</tr>
<tr>
<td>Recruitment Train</td>
</tr>
<tr>
<td>On-the-spot interviewing</td>
</tr>
<tr>
<td>Mentoring</td>
</tr>
<tr>
<td>Testing</td>
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<tr>
<td>Skill-based recruitment</td>
</tr>
<tr>
<td>Recruitment simulation</td>
</tr>
<tr>
<td>Local recruitment</td>
</tr>
<tr>
<td>Office of Diversity and Recruitment</td>
</tr>
<tr>
<td>Multinational recruitment</td>
</tr>
<tr>
<td>Internship offers</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th><strong>3. AWARENESS-RAISING</strong></th>
</tr>
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<tbody>
<tr>
<td>Internal training on Diversity</td>
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<tr>
<td>Diversity management training for HR managers</td>
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<tr>
<td>E-learning on discrimination</td>
</tr>
<tr>
<td>Equal opportunity policy</td>
</tr>
<tr>
<td>Internal diversity networks/committees</td>
</tr>
<tr>
<td>Guidelines; internal documents/charters; roadmaps; agreements on diversity</td>
</tr>
<tr>
<td>Awareness-raising; communication campaign; KPIs on diversity</td>
</tr>
<tr>
<td>HR magazine on diversity</td>
</tr>
</tbody>
</table>

Discussion of Results

As mentioned earlier, the diversity initiatives and actions communicated by the 31 companies fall under three main categories: *invisible minorities*, which has five subcategories (disability; social/racial integration; gender; age; and sexual orientation); *equal access* initiatives dealing mainly with recruitment issues to prevent discrimination in the selection process; and *awareness-raising* actions comprising internal training and awareness of diversity issues for staff and HR managers. If we look simply at the number of actions, by far the most actions concern internal training on diversity followed by social and racial integration actions, recruitment/selection initiatives, then disability, gender, and finally age and sexual orientation. It is necessary to observe these categories more carefully to really understand how companies communicate on their diversity actions.

1. **In/visible Minorities**

Five sub-categories are subsumed under this heading: disability; social/racial integration; gender; age and sexual orientation. As regards disability, 16 companies have communicated on disability actions mainly dealing with collaboration with external organizations and associations without specially stating the types of actions they were involved in. When I write ‘occupational integration of the disabled’, then this is exactly what is written in the company website without stipulating what types of actions, the percentage of those involved, whether this project is widespread in the company or isolated to a particular type of function or company unit. In general, the actions reported remain extremely vague as follows:
XXX souhaite que son engagement en faveur de l’insertion professionnelle des personnes en situation de handicap ne soit pas limité par les frontières ou les différences culturelles. Depuis 1992, une équipe est mise en place pour favoriser l’intégration et le maintien dans l’emploi des personnes handicapées. Cette équipe permet d’accentuer les actions de recrutement, de formation de communication et de sensibilisation à l’ensemble des recruteurs du groupe.

XXX (name of company) wishes that its involvement in the occupational integration of the disabled is not limited by barriers or cultural difference. Since 1992, a team has been put in place to favor the integration and the support of the disabled. This team enables the recruitment, training and communication actions to be increased and to raise awareness among the recruiters in the group. (Company 1).

Here, we are not told what types of actions/initiatives the authors mean, who is involved, at what level of management. These types of statements are totally devoid of meaning for the reader and do not provide the essential information on the actions taken. This is not surprising as in France the majority of companies bypass the law on equal opportunity for the disabled, which stipulates that companies with more than 20 employees must have a quota of 6% of disabled staff (article L.5212-1 to L.5212-4 of the Work Code). Rather than employing the disabled, the companies pay a fine to AGEFIPH (an association that collects funds to enable occupational integration of the disabled). In 2008, AGEFIPH and the State signed a convention to intensify their campaign to require companies to recruit disabled workers (Handicap et Emploi, 2008) and as of 2010, the amount of this fine will be increased to 1,500 times the national wage. However, it remains to be seen if companies prefer to pay the fine rather than employ disabled people as has been the case in the past and despite two laws on disability (Law Employment and disabled 1987; Law Handicap, 2005).

As regards social and racial integration, the companies reported on occupational insertion actions for young people from disadvantaged areas as well as tutoring programs where employees work with young people from these areas, or finance projects to enable school children to acquire the necessary skills and knowledge to continue their studies. The only project mentioned by name is the “Plan Espoir Banlieues” (literally plan for hope in the suburbs), which was launched in 2008 as the “Marshall Plan for the Suburbs” by Nicolas Sarkozy with the aim of tackling education but also transport, accommodation and security in the suburbs of large French cities. This plan has been deemed a failure by Fadela Amara, the Secretary of State for Urban Policies, by Yazid Sabeg, the Commissioner for Equal Opportunity, who stated that “global, coordinated, coherent measures” were required to combat inequality in the suburbs (Le Figaro, 2010) and even by Henri Guaino, special advisor to Nicolas Sarkozy, who stated that “the president of the republic launched the suburbs plan to struggle against social disintegration, but it did not work because it is very difficult to get all this conservatism of the State mechanism moving” (Le Point, 2009).

As regards gender, some companies had signed up to agreements on gender parity, coaching and networking initiatives to help feminize the workplace, had signed up to the Parenthood Charter. The professional equality label16 deserves a mention here as this is one of the three labels that have seen the light of day over the past decade, the other two being the diversity label and the social responsibility label. The equality label (launched in June 2004) is rewarded to companies who respect the professional equality between men and women. This equality label has been awarded to 40 companies since 2004 but has not been as successful as other labels due to the fact that companies do not complete the report on comparative situations thoroughly and have problems eradicating remuneration differences between male and female employees, which is one of the conditions of receiving the label according to Thierry Geoffroy, who in charge of the label at Afnor, the label certification body (Courrier cadres, 2010).

As regards age, only two actions were identified in all of the documents, one regarding the employment of seniors and a forum on senior employment needs. The lack of actions with regard to senior employment can possibly be explained by the fact that legislation on this issue is rather recent in France. The second Senior Employment Fair was held in Paris in 2010, legislation is as recent as 2008 (Law Social Security, 2008) and 2009 (Circular Seniors, 2009), and this despite signing up to the 2000 Lisbon Strategy to reach a senior employment rate of 50% by 2010. Lacombe (2008) affirmed that the senior employment rate in France is the lowest in Europe at 38% of those aged between 50 and 64 and only 13% of those aged between 60 and 64 and this figure has not improved since 2008.

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Therefore, much has still to be achieved to ensure a greater level of awareness of senior employment in corporate France.

And finally, only one company reported an action regarding sexual orientation, namely a network of the GLBT (Gay, Lesbian, Bisexual and Transgender). Sexual orientation is one of the 18 types of discrimination outlined in the penal code (Article 225-1). The lack of reference to actions regarding sexual orientation in the companies studied concords with the findings of a survey carried out by the Falcoz (2008) states that sexual orientation is one of the types of discrimination that is least taken into consideration in large corporations with the respondents reporting fear of coming out in the workplace (66%) and having been victim of homophobic remarks or incidents (88%) or directly via jokes, insults, degrading comments (40%). The lack of actions on sexual orientation can be explained by the taboo nature of this form of diversity and also the fear of the individuals to get labeled in their corporate environment, which may have incidence on their daily work lives and promotion opportunities.

2. Equal Access

In this category, some selection methods were outlined by the companies which enable the selection of diversified groups such as the anonymous CV; on-the-spot interviewing; skill-based recruitment methods; and simulations as well as auditing via situation/discrimination testing (Testing in French) in order to ascertain discriminatory situations. Companies seem to be trying to find ways to ensure that candidates are not discriminated against on selection (via the anonymous CV) and alternative assessment tools such as simulations, on-the-spot interviewing and competency-based models. The anonymous CV is of particular interest as it is considered to be an objective selection tool for candidates prior to their first interview. The reason why the anonymous CV is considered necessary and useful in selection is due to the numerous discriminatory practices carried out by companies at the selection stage as set down in the report by the International Labor Office in a report published in 2007 (Cediey & Foroni, 2007) which compared the relative success of candidates perceived as being “black”, “Arab” or “white” by the French recruiter and demonstrated that 80% of companies commonly discriminated at the recruitment selection stage. This report together with other research by Amadieu & Giry (2006) shows that the name on a CV is a social marker that can reveals the social origin, age, geographical location and possibly the religious affiliation of the candidate and confirms that candidates with North African names are discriminated against as are those with working class name. Even if at French national level a decision was taken regarding the anonymous CV rendering it obligatory for companies with more than 50 employees in the Law on Equality (Law Equal Opportunity, 2006), the application decree of Article 24 of the Law has never been published. Amadieu (2009) in his analysis of recruitment procedures of companies of the CAC 40 found that 50% of companies asked the question if the candidate was a Mrs. or Miss, 5 companies wanted to know about marital status, one third of companies ask for nationality, 42.5% ask for age, with other questions being asked including, driving license, military service, whether the candidate has already worked in the company or knows someone who is working in the company. He would like a clear procedure regarding what candidate information is collected by a company and believes that there is still major progress to be made despite the corporate engagement to diversity and non-discrimination. Fauroux (2005) understands the benefits of the anonymous CV in some sectors and believes it could lead to anonymity and enable those who were previously disregarded at the selection process based on discriminatory factors to be selected for an interview. Lozès & Wiewiorka (2010) in a report commissioned by the government suggest that the application decrees of the anonymous CV be promulgated and rendered obligatory in all French companies despite their reserves about the ethical issues involved in “asking the candidates to mask themselves to be accepted”(p. 70). Lynhiavu (2009) sees the anonymous CV as hiding and institutionalizing racism rather than exposing it and only displaces the moment of discriminatory practice to the interview. And this indeed is the problem with the anonymous CV as it only gets you to the interview and is a problem of mentality. Once at the interview stage, it is no longer possible to hide certain difference, but at least it offers the candidate a chance to get to the interview stage.

More and more companies are having their HR processes tested by third parties to ensure that they are in line with the principle of equal opportunities. Companies mostly mentioned situation testing as the auditing method employed. Situation testing involves sending two comparable CVs to an employer except for the variable you are

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17 An anonymous curriculum vitae (CV) includes a summary of your educational and academic backgrounds as well as teaching and research experience, publications, presentations, awards, honours, affiliations and other details. Your name and other personal indentifying information are not included in order to avoid discrimination.
testing to ascertain discrimination regarding the variable. Testing can be used as proof in a court case since the enactment of the Law Equal Opportunity (2006). The use of testing and auditing is emblematic of the State relinquishing its responsibility to significant others to exercise pressure in its place (Mutabazi & Pierre, 2008). These external actors include Vigeo, the expert auditing company, which measures a company performance regarding corporate social responsibility; IMS Entreprendre pour la Cité, whose aim is to help French companies improve their social engagement, the first mission being the promotion of diversity and non-discrimination; and ISM Corum, an organization, which carries out situation testing.

3. Awareness-raising

The majority of the actions reported on the websites involve initiatives for internal training of HR managers and employees. The type of training was mainly diversity management training, which was dispensed either via courses or e-learning. Many companies also had a diversity committee and had drawn up various guidelines, policy documents, charters, roadmaps and agreements for internal use. One company had even produced a HR magazine on diversity and many reported awareness-raising initiatives and communication campaigns. In this study, while most companies mentioned some kind of internal training and/or communication on diversity, only two had a clearly identified diversity manager and none of the companies had a complete one-stop web section dedicated to diversity, where a potential employee or graduate could find all the information they require on the actions undertaken by the company. This lack of information could be explained by the fact that different companies have different policies regarding diversity. Mutabazi & Pierre (2008) outline four policies on diversity management: the companies that are based on the logic of wait-and-see; the companies that comply with the exiting norms and rules and respect the legal requirements of the State; those who communicate their paper identities; and finally those who use diversity as a company strategy. Broussillons et al.’s (2008) research further testifies to the mysterious, unsuspected and hidden nature of diversity managers in their typology of diversity management in French business.

Having outlined the types of initiatives and actions reported and communicated by the initial signatories of the Diversity Charter, we will now turn to asking ourselves how the business school students and graduates are served by these actions. The categories that most pertinent to business school students and graduates include disability; social/racial integration; gender; equal access; and awareness-raising. I will discuss each in turn below.

As regards disability, there are very few disabled students at business school, approximately 4% of all disabled students in higher education or 340 students out of 8500 in total in 2006 (Bedinger, 2009). This resulted in the Conference of Grandes Ecoles setting up a work group within their diversity commission in order to address this situation in 2008. Once again another charter sees the light of day, the Charter of Grandes Ecoles/Handicap in 2008, which promotes equal access and rights to disabled students in Grandes Ecoles. It remains to be seen if this charter will have any impact on the numbers of disabled students admitted to business or engineering schools. As regards social and racial integration, the most useful diversity action for business students is tutoring initiatives to help students from disadvantaged backgrounds acquire the necessary knowledge and skills to attend business school. Over the past decade, the majority of higher education establishments have implemented greater social cohesion. One of the first business schools to offer such a program was ESSEC (Ecole supérieures de sciences économiques et commerciales) in 2001 with their program (une grande école, pourquoi pas moi PPQM – a business school, why not me?). Their aim was not to provide a quota system but to accompany students from secondary school onwards by providing a student tutor and support regarding orientation. This program has been extremely successful and has been adopted by over 100 other business and engineering schools in France. The aim is not to help students enter business or engineering schools but to provide students with the ambition, the skills and the requisite cultural baggage to go as far as their capabilities will take them. Sibieude et al (2008) in an assessment of this program outline the successes achieved as regards loyalty to the program; the transformation of behavior of the students involved; the increased cultural capital and the evolution of the student’s social representations and worldview. They state that the program “changed their vision of the world, and persuaded them that there was no such thing as fate, that their destiny was not already written for them, predetermined by their cultural, geographical or familial origin” (p. 39). In this report, the authors also hoped for more collaboration from companies to provide much needed funds and human resources. While they admit that companies have started to get involved in tutoring initiatives to promote their image, they believe that non participation in diversity is no longer an option for companies and can even be a

18 Website: http://www.imsentreprendre.com/
handicap. A similar initiative was introduced on the 18 November 2008 by Valérie Pécresse, the Minister for Higher Education and Research, the so-called “Cordées de la Réussite”, a label to recompense various initiatives in France with the aim of favoring equality in the education system. Approximately one hundred partnerships between secondary schools and higher educational establishments have been created to promote social cohesion. Companies have gotten involved in these initiatives but their implication is still not sufficient. The ministry of higher education promised €5m of financial support for these initiatives in 2010. The tutoring on these programs have been criticized by Allouche & VanZanten (2008) for example, who question this tutoring system as the tutors are faced with major constraints regarding the content of the programs; the agendas of the different actors and the lack of experience. They found confusion and ambiguity between what the tutors are trying to achieve with these students and the instructions given by the program directors. They also found that there were at least three agendas in play: the secondary school teacher required a methodical, tailor-made support for their students to help them to progress effectively; the tutors saw their role as transmitters of knowledge; and the students were looking for short-term quick-fix solutions to problems encountered in class. The researchers also seriously question the social identity of the tutors who subscribe to the social and intellectual demands of an elite model of training of which they are the product and of which they ensure, in their way, the reproduction.

As regards gender, there are more female students at business schools and in higher education than male students (Servenay, 2009). As a result, a company who does not embrace gender diversity is missing out on talented and qualified businesswomen as well as the female perspective on business issues. Only one initiative was mentioned in the 40 companies studied that dealt with the integration of female business graduates into the corporate world. Desvaux et al (2009) in a report on gender diversity suggest that the companies where women are most strongly represented at top-management level are also the companies that perform best but attest to the barriers facing women in business today such as the double burden syndrome of home and work; maternity leave; reduced mobility; absence of female role models and mentors in the corporate environment; as well as the psychological barriers that women place on themselves such as the difficulty to identify success and the lack of ambition. The report concludes that fundamental change is required in education and the models of family balance but companies can also do more to espouse best practices such as creating transparency by implementing gender diversity KPIs; implementing measures to facilitate the work-life balance; and helping women to master the dominant codes and nurture their ambition.

As regards selection and recruitment, business students who are susceptible to face discrimination could use the anonymous CV but as we have seen, there are many criticisms of this method and we believe that the universal CV is more appropriate to job seekers. The universal CV is a simplified version of the European Europass CV and was created by the Ethics & Recruitment Association (Ethique et Recrutement) which is completed only once by the candidate and then sent to the employer of his/her choice if they are signed up to the system. The universal CV has many advantages over the typical CV as it means equal opportunity when drafting (due to the standardized format) and dissemination (as the candidate has control of who receives the CV) as well as the possibility of dispensing with the biographic vision of a candidate to move towards skill-, competence- and motivation-based visions of the candidate. It also means that the logistics of the application is no longer the key to success and the process should be easier for both businesses as well as candidates. The first results of this initiative seem positive (Van Coillie, 2009) and this type of CV is set to become more popular among recruiters. While the universal CV and similar initiatives go some way to helping graduates from disadvantaged backgrounds, there is a limit to their effectiveness and the candidates can subsequently be discriminated against at the interview stage. Mozaïk RH, a recruitment agency in Paris has gone further in that they help such graduates find gainful employment by working directly with French and international companies via their diversity managers in order to ensure occupational integration for qualified graduates that face discrimination. Sâïd Hammouche, the founder of this recruitment agency, believes that “as far as diversity is concerned, many companies are still in denial, and have lots of questions” (Vialle, 2009).

Finally, as regards awareness-raising, we believe that it is important for business schools to integrate equality, diversity and discrimination into their curricula in order to raise awareness on these issues prior to entering the workplace. At the present time, few business schools have diversity modules in human resource management courses and many enter the workforce ignorant of diversity management issues.

19 Association Ethique et Recrutement: http://www.ethique-et-recrutement.org/
20 Mozaïk RH: http://www.mozaikrh.com/
This initial research has shown that the 40 signatory companies of the diversity charter do report on diversity initiatives but are extremely vague on the details of these actions, which calls on us to question the level of real engagement of these companies. Therefore, we believe that we need to conduct further research into corporate diversity engagement, and intend to analyze the annual reports of the 40 initial signatories of the Diversity Charter and interview the diversity managers or HR manager in charge of diversity in order to develop a clearer picture of the initiatives invested in and the level of engagement of these companies. We also intend to interview the social and diversity entrepreneurs to ascertain the social and political impact and future of diversity and equality initiatives in France.

References
Circular Seniors (2009) Circulaire Interministérielle N°DSS/5B/5C/2009 du 14 décembre 2009 relative à la mise en œuvre de la pénalité prévue à l’article L. 138-24 du code de la sécurité sociale dont sont redevables les entreprises employant au moins 50 salariés ou appartenant à un groupe dont l’effectif comprend au moins 50 salariés lorsqu’elles ne sont pas couvertes par un accord. Accessed on 14 March from http://ecrire.travailsolidarite.gouv.fr/IMG/pdf/Circulaire_interministerielle_DSS_5B_5C_2009_374_du_14_decembre_2009_2_.pdf [Inter-ministerial circular N°DSS/5B/5C/2009 of 14 December 2009 relating to the implementation of the penalty previewed by L 138-24 of the social security code of which companies employing at least 50 employees or belonging to a group of which the staff comprises at least 50 employees when they are not covered by the agreement].


**Annex 1. Milestones of Diversity in France**

<table>
<thead>
<tr>
<th>Month</th>
<th>Event</th>
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<tbody>
<tr>
<td>November 2001</td>
<td>Law on discrimination</td>
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<td>May 2001</td>
<td>Law on professional equality between men and women</td>
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<td>February 2003</td>
<td>Law on racism, anti-Semitism and xenophobia</td>
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<td>February 2004</td>
<td>Law on ostentatious religious symbols in public schools</td>
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<td>June 2004</td>
<td>Label égalité professionnelle (Professional Equality Label)</td>
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<td>November 2004</td>
<td>Bébéar Report ‘<em>Des entreprises aux couleurs de la France</em>’ (Companies in the couleurs of France) is published.</td>
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<td>October 2004</td>
<td>Diversity Charter launched with 40 initial signatories</td>
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<td>February 2005</td>
<td><em>Loi Handicap</em>: Law for equal rights and opportunity, participation and citizenship of the disabled.</td>
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<tr>
<td>March 2005</td>
<td>Bill deposited on equal salary for men and women</td>
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July 2005  Fauroux Report entitled “La lutte contre les discriminations ethniques dans le domaine de l’emploi (The Stuggle against ethnic discrimination in employment) ».

September 2005  General Secretariat for the Diversity Charter comes into being

October 2005  Civic unrest in the suburbs of French cities.

March 2006  Law on Equal Opportunity

January–December 2007  European Year of Equal Opportunities for all.

February 2007  Project for French suburbs launched ‘Plan Espoir Banlieues’ to tackle education, employment, security and housing.

September 2007  Bodin Report “Diversité sociale dans les classes préparatoires aux Grandes Ecoles: mettre fin à une forme de “délit d’initié”” (Social Diversity in Preparatory Classes to enter French Business and Engineering Schools: put an end to a form of “offence by those initiated”.

April 2008  Charter of Parenthood

December 2008  Diversity Label is launched

December 2008  Law on financing social security implemented actions on employment of seniors.

December 2008  Nomination of Yazid Sabeg as the Commissioner of Diversity and Equal Opportunity

January 2010  Request for Grandes Ecoles to accept quota system of 30%
Experiential Learning in Accounting

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Objectives of proposal
The purpose of this paper is to present a case with examples, of the use of experiential learning in accounting courses, through the medium of simulated practical cases to enable students to experience examples of scenarios they may encounter in the workplace. Examples of simulations employed by the author in the classroom are described as examples of the experiential approach. The experiential approach is described here, as a means to assist students in their learning in the classroom. The use of cases to simulate actual accounting situations students may encounter in the business environment is considered from the perspective of its positive impact on student learning. The experiential approach is relevant to all levels of business and accounting (and other) courses, and this approach is transferable across disciplines and contexts.

Perspectives on practice
For many years, professional accounting firms have employed the simulated case technique in teaching accountants and students. Demonstrating the policies of the professional accounting/auditing firm (partnership) in auditing procedures, professional development (PD) departments have illustrated the audit practices of the firms, by means of simulated case studies, (created from their audit experiences in the firm), at the same time, reinforcing accounting principles.

Mode of Inquiry
The opportunity to develop this approach in academic programs has been effectively utilized in some disciplines, but there are opportunities to capitalize on these approaches and use them with particular effect/impact, in accounting and auditing courses. This introduces an opportunity as an aid to learning for these students to "experience" a simulation of reality they might meet in professional practice..

Data Sources
The following simulation examples are all created by the author and presented as examples of in class simulation assignments. One assignment is the application of accounting principles and auditing standards for students to determine an acceptable range of materiality from guidelines, in carrying out an examination of a client's financial statements to determine the nature, extent and timing of audit procedures. This is also a clear example of the importance and meaning of professional judgement in applying these guidelines.

A second assignment described is a simulation of an evaluation of errors identified in an accounting population from the same client, and the impact of that evaluation.. What influence would this "misstatement" have on a knowledgeable user of these financial statements?

A third in-class assignment is a simulation of a physical count of cash at the client's business premises, as a confirmation of the existence and effectiveness of the client's internal accounting controls.

Conclusion
The application of experiential learning has a demonstrated positive impact on student learning. It provides students a practical framework for learning, i.e. "learning by doing".

Innovation, evolution of practice
The author plans to expand on the opportunities for these activities in these courses, and in others. This will necessitate planning for additional planning and implementation time. It will also require identification of areas associated with specific learning objectives, to be able to
adequately evaluate achievement of individual learning outcomes.

References
Excellence in international education: a European context

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Understanding international positioning of Dutch universities of applied sciences (UAS’s)

After decades of intensive internationalization initiatives, Dutch UAS’s are still tuning their international education strategies and tactics. Years of experimentation with combinations of internationalization at home and abroad haven’t quite been able to fully satisfy their international ambitions. The question is how realistic and authentic these ambitions really are.

The concept of Internationalization in the Netherlands is two-folded: production and exchange of scientific knowledge and meeting increasing demands of a growing global marketplace. For research universities internationalization activity comes as an emergent co-product of knowledge production and sharing, whereas institutions of professional education aspire to internationalize on the same basis, however lacking a compatible output in ‘world-class’ research. Internationalization then becomes more experience driven, seeking relevance and urge to being incorporated in students curricula and staff’s agenda’s. Moreover tightening budgets and time frames feed both students and staff’s diminishing motivation to either study/exchange abroad or participate in international programs at home. Even without proper motivation Internationalization is heavily stimulated by a national agenda, requiring institutions to develop a relevant international (European) outlook.

As a consequence internationalization is often treated as a tick-box phenomenon, usually described in terms of quantitative institutional ambitions and output. Without ambitions and objectives that genuinely add value to curricula, internationalization initiatives are doomed to marginalize and subsequently fail.

A qualitative benchmark of internationalization initiatives amongst UAS’s in the Netherlands indicated that studying several variables closely could enhance an institutions objectives and scope for designing a meaningful international program. An integrative international ‘value chain’ helps identify possible gabs in a viable international positioning strategy, based on (re-)evaluating the institutions identity (history, brand and products), competition and stakeholders. In order to turn trends however UAS’s need the ability to embody the importance of international initiatives in order to restore passion an motivation amongst all stakeholders. Internationalization amongst students, lecturing staff and the institutions governing bodies requires authentic purpose and aligned thinking.

During this workshop I will briefly clarify the variables in the positioning model and share some experiences and good practices in the field. During the workshop separate round table sessions will discuss three positioning themes more in-depth: Institutional identity, International value chain integrity and Das Umfeld (the surroundings: stakeholders and competition). The outcome of each of the sessions should contribute to ‘value’ thinking in internationalization initiatives and identifying gabs in matching ambitions and potential of UAS’s.
The MBA: a learning system in need of rethinking?

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Abstract: Since 1989 the Open University MBA has offered practicing managers a route to improved professional practice and career development. Experience with a new consultancy module suggested that a substantial proportion of students were not benefitting as intended. Students were learning theory instrumentally rather than using it to prompt rethinking of their assumptions and practice. Action research during 2008/9 explored the reasons for this and suggested ways of redesigning the MBA to achieve a more critical engagement. One key feature of the current system is its strongly hierarchical nature, which ‘disables’ managers as learners. A more collaborative and co-creative learning system would pose serious dilemmas for academics and sponsors. How can managers and academics mutually exploit their very different professional backgrounds for shared learning? Recognizing both shared concerns and real and significant differences in perspective is central to achieving this.

Introduction

The Open University Business School (OUBS) MBA was introduced in 1989 as a distance learning program for experienced managers. We have always claimed to exploit this experience, and to offer ‘theory’ as a practical tool for increased effectiveness, rather than as an end in itself. Many assignments are based on students’ own organizations. In 2005 a new final module was designed to encapsulate this approach: students were required to draw upon the theory they had learned in their MBA to inform an internal evidence-based consultancy project. By early 2007 it was becoming clear that many students could not use theory in this way, calling into question the value of 2 years (and 1200 hours) of their ‘learning’. We needed to understand why this was happening and do something to change it so that the MBA experience impacted upon the majority of students’ management practice as intended. While this has been a substantial and ongoing project, this paper focuses mainly on an inquiry undertaken by central and associate faculty during 2008, and the actions and shifts in thinking which resulted from this.

Initially a small group of interested faculty started to discuss their perceptions of both what was happening and what should be happening. Early in these discussions the term critical engagement was adopted to describe the approach to learning that we sought. The group orchestrated a wide range of discussions with key stakeholders in MBA learning, including Associate Lecturers, alumni, current students and central faculty. (OUBS central faculty design courses and create multimedia learning materials and assessment frameworks. Associate Lecturers, or ALs, are experienced and qualified managers and management developers who interact with and support students and mark – and teach via – their assignments.)

At first we blamed the inability to use theory on the quality of students and the time pressures they were under. Then we realized that we were responsible. We had inadvertently created a teaching system which allowed, indeed positively encouraged, an instrumental approach to study. (Thinking in systems terms was helpful since it focused us on a wider range of potentially relevant factors, and on the relationships between them.) Since the ALs we consulted estimated that 60–75% of students nearing the end of their MBAs appeared to have difficulty in putting theory to use, this needed to be changed. We first needed to understand the reasons.

Funding was obtained for AL involvement in this investigation. ALs were asked to identify the main barriers to engagement for students on the module they taught, and to suggest ways of removing these. This paper focuses on this investigation, the shifts in thinking and actions which resulted, and the questions generated for those teaching on an MBA. Although the OUBS teaching system is in many ways distinctive these questions seem relevant to MBA teaching more generally.

Method of inquiry

Funding was obtained to allow 12 ALs to work with central faculty to explore the issues in more detail. Five small teams were formed, associated with core MBA modules and the two most popular electives. The brief was kept deliberately loose and atheoretical to avoid slanting or limiting the line of inquiry. All team members, as MBA teachers, were however familiar with a wide range of management and learning theory, and a wide range of theoretical papers on management learning and knowing were made available as a resource.

The project was action oriented and carried out by those involved in the issue (Coghlan, 2001). Teams were asked to identify barriers to critical engagement, and suggest ways of removing these. An online environment was
created for discussions within and between teams, and teams also consulted online with other colleagues teaching their respective modules, some formally, some less formally. Each team was required to produce interim and final reports on their deliberations. These reports were discussed with a wider group of central faculty at a final 24 hour face-to-face workshop and short and longer term recommendations for the MBA were produced at the workshop. (A fuller account of this part of the inquiry is given in Cameron 2009.)

Subsequent to this phase of inquiry a number of other small projects have explored aspects of the situation in more detail, looking at student expectations both at start and towards the end of the MBA, at how ALs can help a global cohort of students to collectively draw upon their diverse experience, and at the skills which may need to be targeted. These, and further individual and collaborative reflection on the implications of the teams’ findings, and on relevant literature have contributed to the insights and conclusions reported here. Redesign of Stage 1 of the MBA is almost complete, and this experience has begun to test the emerging ideas.

**Insights gained**

The inquiry highlighted a number of tacit assumptions about our own teaching that needed to be questioned, and shifted the thinking of participants quite substantially. The first assumption was that there was a shared view of MBA teaching goals. We discovered a wide divergence of views about what an MBA program should seek to achieve. As a result of early discussions we adopted the term critical engagement to describe the approach to learning we sought. This term seemed to resonate with all concerned, and was helpful in generating interest in the project, even though both ‘critical’ and ‘engagement’ meant very different things to different stakeholders.

A degree of convergence was achieved by describing critical engagement metaphorically as three cogwheels. The manager’s thinking was seen as a central cog. This thinking cog needed to engage with a ‘theory’ cog and with a ‘practice’ cog for the intended learning to take place. Engaging thinking with theory would allow theory to change thinking, or vice versa. Engaging thinking with practice would allow thinking to change practice, and vice versa. Theory and practice were connected via thinking. The metaphor seemed more immediate than Kolb’s (1984) experiential learning cycle with which students and faculty are familiar but which seems to convey to many a more sequential process.

The second key realization was that rather than ‘blaming’ time poor students for adopting a ‘disengaged’ and instrumental approach, we could more usefully think in terms of a system which we had created which encouraged and rewarded an instrumental approach. One student said she had been taught to ‘populate’ rather than use theory. Another said ‘I started my MBA trying to apply theories at work. I soon learned that this was not what gained me marks.’ This directed us towards considering the nature of this (notional) system, and the way in which different features impact on learning.

The third surprise was the excitement participants in the project felt and the novelty of this experience. Although we have always stressed the importance of reflective learning to students, this was the first time most participants (ALs and central faculty) had reflected collaboratively on their practice as teachers. One longstanding AL said ‘This was the first time that MBA ALs have worked together in this way’. A central faculty colleague said ‘I’ve never had this sort of discussion before’. We realized that in failing to reflect regularly on our own professional practice we were falling short of what we taught others.

The fourth insight was the deeply hierarchical nature of our system. Academic priorities and practices define the system and these priorities are not subject to question by students. While this leads to a robust and stable system, and satisfies our (triple) accreditors, it has the effect of devaluing the extensive experience of managers on the program and of perpetuating the divide between academic and management ‘landscapes of practice rather than creating ‘bridges across the landscape’. (Wenger 1998, p159).

Finally we realized how many ways there are in which the system explicitly and implicitly discourages engagement. Emphasis on academic ‘rules’ serves to discourage practical managers from adopting a critical approach to either theory or practice as they focus on working out the rules. Students see an academic writing style as irrelevant to their professional writing. (Does their seemingly willful refusal to reference Harvard-style reflect a psychological resistance rather than any technical difficulty?) The volume of ‘content’ presented allows little time for thought. The breadth of assessment questions combined with stringent word limits encourage superficiality. ‘Application’ of theory in assignments is typically focused on demonstrating understanding of those ideas and plausible use of terms and models to describe situations, rather than on using theoretical ideas to generate questions resulting in insights and changed behavior. Many ALs reinforce student instrumentality by interpreting their role as helping students pass modules rather than to challenge their ways of making sense of their professional role and context. Many are alumni shaped by the system while students themselves.
Discussion

Many of the barriers identified can be (and are being) relatively easily addressed. A redesign of the entire MBA is currently being undertaken. The nature and benefits of engagement are explained at the outset. Stage I of the program is now driven by practice-relevant activities. These will contribute to assessment which features depth as well as breadth, and application to students’ own management practice as well as its context. The final assignment in Stage I will be issue based and serve to introduce the approach the final module will require. There has been an attempt at reducing the number of theories taught. There is a strong individual and collaborative strand running throughout the program.

A more difficult recommendation to implement was that the system should become less hierarchical: learning should be seen as a more collaborative and co-creative undertaking. This requires a rethinking of the respective roles of students and teachers. Instead of being seen as ‘apprentice academics’ managers on the program need to be considered as (quasi)professionals in their own right. Two sets of ideas have been helpful here. The first is the idea of self-authoring (Kegan, 1994), and the learning partnerships model developed from this (Baxter Magolda, 2001, 2009). The second is the idea of relational agency (Edwards, 2005, Edwards and Kinti, 2009). Taken together they help to clarify the shift in thinking that is needed if a more collaborative approach is to be achieved.

Developing self authoring

Kegan’s (1994) idea of the developmental stage of self-authoring as a way of knowing resonates strongly with the idea of critical engagement. A self-authoring mind is one in which knowledge is understood as something constructed in a context, as coming from one’s own perceptions, interpretations, and evaluations, stemming from a sense of curiosity and sense of responsibility for one’s own perceptions, interpretations, and learning. At this level it is possible to co-ordinate multiple roles and different expectations and adopt different perspectives. This is contrasted with earlier stages in which knowledge is seen as a possession, as objective truth derived from experts or authorities.

Adopting an expert role as teacher will necessarily inhibit the development of a self-authoring way of knowing by reinforcing dependence on authority. Baxter Magolda (2001, 2009) has developed a learning model better suited to learning at this level. She suggests six principles for developing transformative, self-authoring learning:

1. Validate participants as knowers, respecting their thoughts and feelings; without confidence in their own thinking, and the permission to think for themselves they are unlikely to construct their own ideas.
2. Situate learning in students’ own experiences, helping them to see these as opportunities for learning and growth, thus providing a sound foundation for learning.
3. Define learning as mutually constructing meaning, a process whereby teachers collaborate with students to analyze their own problems and engage in mutual learning.
4. Highlight the complexity of work and life decisions: it is important to discourage simplistic solutions.
5. Encourage participants to develop their personal authority by paying attention to their own thinking.
6. Encourage participants to share authority and expertise, and collaborate to solve problems.

The similarities with the conclusions of our own inquiry are striking, but this formulation articulates the principles more clearly. The link with Kegan’s model provides a supporting rationale for our unease with the prevailing hierarchy. Many of the barriers to engagement in our existing system worked to invalidate participating managers as knowers.

Developing relational agency

Once participants are seen as professionals with their distinctive priorities, practices and ways of thinking, the challenge becomes that of developing effective ways of working together from these very different mindsets. Edwards (2005) explored this question in the context of teachers and other professionals working with disadvantaged young adults, and suggested that the idea of relational agency was helpful. This was seen as the capacity to work with others, recognizing the resources (in particular the cultural tools) that they bring to the situation and negotiation the use of these resources for mutually increased understanding. Bringing together two or more sets of perceptions and interpretations will enrich understanding of a problem space.

Edwards and Kinti (2009) suggest that exercising relational agency involves two stages. First, working together to expand the task by recognizing the motives and the resources that others bring as they too interpret it. Second, aligning one’s own responses to the newly enhanced interpretations. Both stages may be problematic, striking at the heart of professional (and personal) identity, and bringing professional boundaries into question. But the skills may be extremely important for managers in their own right. Not only will they enable a more engaged and
more mutual learning, but the prevalence of inter-functional and inter-professional teams suggests they will be highly transferable. (They may be equally important for faculty working across boundaries.)

Conclusions
Adding ideas of self-authoring and relational agency to those of a more collaborative and non-hierarchical learning system suggests a need for deeper rooted changes than the design changes already in hand. An MBA would cease to be an academic apprenticeship at the feet of the experts, and become instead a shared exploration of possible meanings creating possibilities for previously unconsidered actions.

Academics’ could usefully work with managers (and in the case of the OUBS, also ALs) to clarify what they, and participant managers can usefully bring to, and seek to take from the learning occasion, and how to develop the skills needed by all parties to exploit the diverse resources they can potentially contribute.

The issues of professional identity, boundaries and power may be hard to resolve, and changes here cannot be imposed. The potential benefit in terms of learning for all those involved in the MBA, whatever their role, is substantial enough to warrant an attempt at cultural change.

Limitations to the research
Both the focal inquiry and ongoing reflection are based on a constructionist view of management knowledge, and a conception of an MBA as practice-relevant professional learning. A key goal of this learning is seen as being to develop more flexible thinking, with the ability to incorporate a range of perceptions, interpretations and values into the understanding of situations. If this view is not accepted then the suggested ways of making sense of learning on an MBA will not be helpful.

The inquiry was loosely defined, richly textured and created a sense of increased understanding in participants. However it is subject to perceptual and interpretive bias. The ‘evidence’ was predominantly in the form of quotes which seemed to the inquirers to add to their understanding of the situation. All inquirers were insiders with their own prejudices and preferences. Communicating the significance of participants’ shifts in understanding to others who had not participated presents an ongoing challenge.

Although actions are being taken in response to changes in thinking generated by the inquiry, the redesigned program has not yet been tested on students. Recommendations suggested fundamental system changes were needed if the new program was to be as effective as hoped, but the inquiry cast only limited light on how these (primarily cultural) changes might be achieved.

However, the sense of having made a substantial advance in understanding by means of collaborative reflection within (loosely) an action research framework was rewarding for all concerned, and prompted changes to our personal approaches to teaching, as well as sensitizing us to a number of previously un-noticed barriers to learning that we were inadvertently creating.

Outstanding questions and dilemmas.
If an important aim of the MBA is to change the way managers think about their practice, how can we reconcile ‘validating participants as knowers’ with challenging their long-held beliefs and assumptions about their own thinking and practice and in some cases its assumed superiority?

We charge premium fees for the MBA. How can we reconcile that with a move away from an expert position as teacher?

How can we convince our accreditors (and some faculty colleagues) that quality of learning may be inversely proportional to quantity of content, and a means rather than an end?

How can we distinguish between academic practices which are valid only within the academic (primarily research-oriented) landscape and those which are equally of value to MBA participants?

How can we persuade colleagues (who may have little contact with current management practices) to venture into this less comfortable territory, and to relinquish their comfortable position at the top of the hierarchy?

Will we be competent to design assignments and assess students’ work if we move away from ‘correctness’ to ‘insightfulness’?

References


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Internship Supervision at a Distance in Business Education

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Like many universities and faculties, Maastricht University School of Business and Economics (MUSBE) perceives a change in its student population. Ongoing internationalization leads to the inflow of a heterogeneous group of students causing a change in the general student profile but also a change in demands with respect to the education that is offered. Students expect more flexibility and a better match between their demands and the supply by the university.

The growing possibilities of information and communication technology (ICT) can help to support many facilities and activities that come forward to these developments and were not possible before. The support of virtual teams in preparatory education for prospective students by facilitating (a)synchronous communication (Rienties, Tempelaar, Dijkstra, Rehm & Gijselaers, 2008; Giesbers, Rienties, Gijselaers, Segers & Tempelaar, 2009) is a successful example of using educational technology effectively.

Within a project called SPRINT e-learning several initiatives focused on the application of e-learning in business education at MUSBE are combined. This round table focuses on the use of ICT in the support of internship supervision where an approach using virtual communities will be used. The discussion will focus on the best way to continue our implementation of virtual teams based on what we learned in the startup of the project through literature study and a survey among students. Practical experience from colleagues is highly valued since development of virtual communities in business education and research thereon still is in a starting phase. The implementation of virtual communities needs to be developed further to increase our knowledge on how to effectively establish virtual teams, manage them and make them successful.

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Peer mentoring and tutoring was introduced in 2009 at Avans University (Netherlands) to reduce dropout. Since then it has successfully expanded. The reason for its success is the win-win situation for both students and academies.

The goal of peer mentoring is to provide participants (mentees) - all freshman - with academic and personal support and encouragement in the areas of study skills, information skills, the orientation to the institution and study programs and adjustment to a new life-stage and study-environment. This goal is accomplished by coaching by a mentor (2nd or 3rd year student). The mentor helps the mentees to develop a clearer understanding of themselves, their abilities, interests, ambitions, strengths and limitations as they relate to academic environment.

The goal of peertutoring is to support participants (tutees) to improve understanding of a specific academic subject (for instance English or Business Administration) so that they can improve their grades and pass their exams. To prepare the mentors and tutors for their jobs, they have to follow a training-program. There they learn how to coach students and how to "teach" (basics of didactics). They also learn more about information skills (media-literacy), study-skills and the organization of the institution (Avans University).

The research of the effects of peer mentoring and tutoring is still in progress, but until now the results of the peer tutoring project are very positive. The grades of the participants were compared to the grades of students who did not participate in the project. Most of the tutees (90% or more) successfully completed their courses. Besides that, the participants filled in a questionnaire about the influence of peertutoring on their study-behavior. The results show that they feel more committed to their studies. The tutors, mostly excellent students, also filled in a questionnaire. The results show that they are all very enthusiastic, they like the extra challenge. They feel that they have improved their coaching and didactic skills and have a deeper understanding of the subject-matter. This can be useful in their study and working-careers. The mentoring-project will be evaluated in May 2010.
Challenging the Very Idea of Measuring Learning in the Professions: An interplay between a measure of learning strategies and learning theory

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Introduction
Learning strategies are a highly relevant predictor of several academic outcomes in many disciplines across college education (Entwistle, 1998; Prevatt, Petscher, Proctor, Hurst, & Adams, 2006). In Business and Economics studies as well as other professional disciplines, learning strategies have been investigated in an effort to better understand how students learn and perform. This is an important aspect since learning has influence on academic performance in the class-room, if we look at short term effects and also on a long term, when considering how the future graduates are going to perform in companies. From a theoretical perspective, Kolb (1984) provides one of the most useful models to describe the adult learning process. Although his work gives interesting insights for the business context, the research on learning strategies using his model remains inconclusive (Holman, Pavlica & Thorpe, 1997; Reynolds, 1997). A more general framework to understand learning strategies in professionals’ education is the model of Strategic Learning (Weinstein, 1994; 1998). The strategic learning is focused on students as active, self-determined individuals who process information and construct knowledge. The model has the learner at its core, and around this core are three interactive dimensions that explain successful learning: skill, will, and self-regulation. Skill refers to the various actions or thinking processes related to recognition of key concepts and processes and how meanings are constructed. Will indicates individual learning attitude, acceptance of new information, will to concentrate and make efforts, and anxiety toward his/her own learning performance. The Self-regulation (Zimmerman, 1989) describes how individuals manage their personal learning process, especially how to plan, monitor, focus on and evaluate their own learning.

In order to assess these three dimensions of learning strategies, a self-report instrument was developed by Weinstein and Palmer (2002), Learning and Study Strategies Inventory (LASSI). LASSI is composed of 10 scales that capture students’ awareness about and use of learning and study strategies and which relate to one of the skill, will or self-regulation components of strategic learning. According to Weinstein and Palmer (2002), three sub-dimensions, Information Processing, Selecting Main Ideas and Test Strategies, relate to the skill component. Three other sub-dimensions relate to the will component: Anxiety, Attitude and Motivation while the last four, Concentration, Self Testing, Study Aids and Time Management sub-dimensions relate to the self-regulation component of strategic learning. Specific sub-dimensions of study strategies, such as Selecting Main Ideas, Test Strategies, Attitude, Motivation, Anxiety, Concentration and Time Management, seem to be of particular relevance, especially for the research of factors associated with academic success (Cano, 2006; Loomis, 2000; Yip & Chung, 2005).

Over the past 20 years, LASSI continues to be one of the most widely used instrument in the evaluation of learning strategies either as a diagnostic tool or for research purposes. Still, not so strong evidence was provided for its psychometric qualities and serious concerns have been raised about the structure underlying its dimensions (Cano, 2006; Melancon, 2002; Olaussens & Braten, 1998; Olejnik & Nist, 1992; Prevatt et al., 2006). Several authors (Haught, Hill, Walls & Nardi, 1998; Pintrich & Johnson, 1990) recognized LASSI to have a good prognostic as a research instrument in addition to being a diagnostic or evaluation tool and, more and more, research is undergone using LASSI for the prediction of various academic outcomes. However, it remains unclear to what extent the instrument is measuring in a valid and reliable way the concept of learning strategies. These conditions are measurement properties necessary to judge the quality of an instrument (Terwee et al., 2007). Consequently, the choice of using LASSI not just in counseling but also in research in various academic disciplines should be based on such evaluations. Pointing to the insufficient psychometric information provided in the LASSI manual about the instrument’ scores, and also to the studies drawing the attention to the same flaws, there is still a need for studies investigating the internal validity of the instrument.

Aim and Research Questions
The present study examined the content validity and dimensional structure of a modified version of LASSI by addressing the following research questions:
1. First, are the skill, will and self-regulation dimensions comprehensively represented by the items in the questionnaire?
2. Second, is the instrument able to distinguish the three theoretical dimensions of strategic learning, skill, will and self-regulation? And if so, is the instrument able to distinguish the learning strategies on a sub-dimensional level?

Sample and Procedure
510 first year students from two professional programs at a Dutch University completed a modified version of LASSI. The questionnaires were processed on paper, during tutorial meetings in October - November 2009.

Instrument
The study strategies questionnaire was constructed on the basis of the Learning and Study Strategies Inventory (LASSI, Weinstein & Palmer, 2002). This modified version included seven out of the 10 original sub-dimensions of LASSI. The reduction of the three sub-dimensions was necessary for reasons dealing with factors able to predict academic performance. The following sub-domains were included: Selecting Main Ideas, Test Strategies, Attitude, Motivation, Anxiety, Concentration and Time Management. Responses to each question were on a 5-point Likert-type scale.

Results and Discussion
The first research question addressed the content validity and was established through the description of the measurement aim, target population, the concept being measured, the item selection and interpretability. The learning strategies concept seemed to be comprehensively represented by the items in the questionnaire.

The second research question explored the structure components of the items and if the three dimensions can be distinguished. The results of the exploratory factor analysis suggested that the modified instrument does not measure the three dimensions as described in the original version of the LASSI. A principal component analysis with varimax rotation yielded two distinct factors. Factor 1 consisted of Attitude, Concentration, Motivation and Time Management items. The items belonging to Anxiety, Selecting Main Ideas and Test Strategies Scales loaded on Factor 2. Factor 1 explained 15.45% of the variance and was labeled “Affective strategies” while Factor 2 accounted for 13.95 % of the variance and was labeled “Goal strategies”.

The results are consistent with the findings of previous authors (Melancon, 2002; Olausson & Braten, 1998; Olejnik & Nist, 1992; Prevatt et al., 2006). Even more, the same component structure was confirmed by the study of Cano (2006), which is still in line with the initial theoretical model of Weinstein and Meyer (1986) but not with their later framework of Strategic Learning. It might be the case that a different model of learning should be in use to explain different components of the learning strategies concept.

Overall, the results suggest that using the scoring strategy proposed in the original LASSI Manual might require some revisions. The research vs. counseling purpose of using the instrument should prime in this choice. Although very informative and providing in-depth information, such measure might be used more efficiently for research purposes in accordance to a different theoretical model than the one specified by the LASSI’s authors. Only taking into account the content validity and dimensional structure is a necessary but not sufficient condition to draw a conclusion on the psychometric properties of the modified instrument. Other validity indicators, as mentioned by Terwee and colleagues (2007), should be included to provide a more comprehensive picture of the qualities of instruments derived from LASSI. Finally, such investigations should include samples from other professional studies to see if in understanding learning strategies different theories might be working for different populations.

References
Integrating Professional Skills into Bachelor of Commerce Programs: A Case Study

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Abstract: Professional skills in business schools generally include communication skills, teamwork, critical/analytic thinking, quantitative analysis, presentation skills, and ethical practice. This paper describes how faculty and staff at one School of Business were involved in the development and integration of seven professional skills into a new four-year Bachelor of Commerce degree and offers successes, challenges, and recommendations to others who may be involved in similar processes.

Keywords: Professional skills, graduate qualities, Bachelor of Commerce, learning outcomes

Introduction
In September 2006, MacEwan’s School of Business in Edmonton, Alberta, Canada launched a new four-year Bachelor of Commerce (BCom) degree with two majors, Management and International Business. The following year, a third major, Supply Chain Management was added, and in 2010, additional majors in Accounting, Marketing and Human Resource Management are being developed. A key component of the curriculum framework is the integration of seven professional skills. Professional skills, generic skills, or graduate qualities are not unique to MacEwan or to schools of business. What is unique is faculty involvement throughout the whole process of integrating the planned development of students’ professional skills in a systematic, articulated manner over four years of study. From the beginning, it was understood, that to accomplish this successfully would require the collective effort of faculty members and a significant amount of facilitation and coordination from academic support staff.

The professional skills of presenting, research, writing, group work, case study analysis, technology, and ethical practice have been systematically developed and integrated into a four-year Bachelor of Commerce program. This paper first describes how faculty and staff were involved in the development and integration of the professional skills into the BCom program and courses via a five-phase model (See Appendix 1): 1. Institutional Preparation Process, 2. BCom Curriculum Development Process, 3. Professional Skills and Curriculum Mapping Integration Process, 4. Evaluation Process, and 5. Faculty Integration Process (embedded within each phase). Although the phases are presented sequentially there is overlap between the phases and the activities within each phase. Next, this paper offers successes, challenges, and recommendations to others who may be involved in similar processes.

The process of planning, developing, implementing and assessing the new BCom degree will span eight years. At this time, MacEwan is in year five. To date the process of integrating the professional skills has taken four years (Figure 1).

Institutional Preparation Process
At the time of the creation of the BCom degree, MacEwan was a college and new to granting degrees. In addition to approximately 70 one and two year certificate and diploma programs, MacEwan had been offering the first two years of university transfer programming in a variety of disciplines for a number of years. Therefore, university transfer courses were aligned to the courses developed by the large university across the river, to which the majority of students transferred. So the opportunity to develop, and deliver a unique four year degree was both an exciting and daunting prospect for faculty members. Because of this history, there were structures in place that aided the BCom development process.

The first structure is MacEwan’s course approval policy, which requires an approved Master Course Syllabus for each credit course. Requiring a master course syllabus enables faculty integration through the role of curriculum coordinator and specific course leaders who jointly create the master course syllabus and are responsible for any changes to it before it goes to the office of the associate VP Academic for approval.

The second structure is MacEwan’s long history of external stakeholder involvement. MacEwan works with employers in the delivery of many specialized career diploma and certificate programs. In the development of the BCom degree, MacEwan’s School of Business established two new advisory councils. The first is an academic
The advisory committee comprised of senior academic and business leaders who assist in the development of research and scholarship by assisting faculty with opportunities to work with academics from other national and international institutions. The second is a Business Advisory Council composed of business leaders who provide the school with advice on strategic planning and ways to position the school as a leader in the fields of business and management.

The third structure is MacEwan’s School of Business common course curriculum approach which ensures consistency of course outlines and evaluation methods among different instructors and sections. Faculty integration takes place though the role of course leaders who are responsible for course materials, instructor liaison, inter-intuitional coordination, and online content. They are experts in the discipline and advise the chair. Their role relationship with other faculty is a collaborative one, not supervisory, respecting academic autonomy of all instructors.

The fourth structure is MacEwan’s guiding principles that were developed to assist faculties and schools in the degree development process. These principles are: emphasizing teaching and learning; ensuring ease of transferability to other institutions; valuing linkages to the community; valuing small classes and personal interaction between students and instructors; expanding program offerings; expanding access to quality educational programs and services; participating in scholarly activity; and, accommodating internal transfers from non-degree to degree programs. In addition to the degree granting principles; MacEwan’s mandate, mission, vision, educational philosophy statement, and educational goals guided the BCom degree development process.

**BCom Curriculum Development Process**

The MacEwan School of Business convened a curriculum committee to recommend the structure of the curriculum and discuss curriculum issues. The committee first considered MacEwan’s educational philosophy and then established learning goals and outcomes for the program as well as expected competencies of graduates. The curriculum was designed to be student-centred and incorporate academic and professional learning through breadth, depth and choice of study. In designing the curriculum faculty considered the overall requirement for degrees, accreditation standards for business degrees, as well as employers’ requirements based on feedback from its advisory groups. Other considerations included: integration with professional designations, significant liberal arts requirements, consultation with industry, external consultation with academic experts, access to graduate education, experiential learning focus, community involvement and civic responsibility; international content and technology integration. The curriculum committee determined students would have a solid education in business areas of accounting, finance, statistics, marketing, economics, and management, and would initially offer three majors: Supply Chain Management, International Business, and Management.

One of the most exciting and daunting processes in the development of the degree was planning for the site visit by a review committee reporting to the Alberta Quality Council, the provincial government body tasked with recommending new degrees for approval. Faculty had to document and defend the proposed program and answer questions from content experts from major universities. The MacEwan School of Business spent significant time and effort preparing for the Campus Alberta Quality Council’s site visit. MacEwan held nine one and a half hour sessions during the two months prior to the site visit. Faculty members were assigned lead roles to research and present the curriculum for each major. Other faculty members were assigned one professional skill to present and show how this professional skill would be integrated into the courses. The sessions included a presentation (two-thirds of the session) followed by a discussion (one third of the session). Presenters were free to choose the method of presentation, but were required to present or defend issues, likely to be raised by the site reviewers. The presenters were asked to address the following:

- Describe the learning outcomes and objectives and show they are at an appropriate level for a baccalaureate degree,
- Explain how quality of learning outcomes and currency are maintained,
- Demonstrate that the curriculum has a clear focus, and that courses are taught at the appropriate depth and breadth for a baccalaureate degree,
- Demonstrate the progression of complexity in content and expectations between third and fourth year,
- Provide examples of instructional methodology for courses,
- Describe sample assignments for courses,
- Show how each major provides appropriate preparation for graduate studies and/or professional designations,
- Discuss how applicable co-op, field studies, etc. are incorporated,
- Describe the expectations of senior level courses in terms of research and major projects,
- Describe a competency profile for a graduate of the major.
- Describe how professional skills are integrated and assessed for the major in third and fourth years.

The faculty presentation sessions went very well due to the extensive preparation faculty undertook. These sessions afforded faculty the opportunity to think through and articulate curriculum framework and structure. The process also built commitment to the program and the faculty team, which were noted by the site visitors from the Quality Council.

To assist in curriculum development related to professional skills, the School undertook a literature review of general professional skills and a specific literature review related to each of the seven professional skills. The terms attributes, capabilities, competencies, qualities, skills, and traits have been joined with the terms core, generic, life-long learning, personal, professional, and transferable to describe sets of student characteristics that educational institutions wish to have embodied in their graduates. The lack of consistent terminology in defining these student characteristics, has resulted in the interchangeability of the use of these terms (Clauchy & Ballard, as cited in De La Harpe, Radloff, & Wyber, 2000; Sumson & Goodfellow, 2004; Bath, Smith, Stein, & Swann, 2004; Robley, Whittle, & Murdoch-Eaton, 2005; Robley, Whittle, Murdoch-Eaton, 2005, Cushinahan & Tafe, 2009, and Bridgestock, 2009).

The plethora of different terms contributes to the difficulty in comparing research across a broad spectrum of countries, institutions, and programs. The positive aspect is that these institutions and programs have selected terms and definitions, which are practically applicable to their unique circumstances, and which best serve their stakeholders’ wants and needs. This is expressed by Bowden et al (as cited in Barrie, 2007, p.440) with their description of these student characteristics as “understandings a university community agrees its students should develop during their time with the institution” and which go “beyond the disciplinary expertise or technical knowledge that has typically formed the core of most university courses.” Barrie (2004, p.262) also notes that in Australia these student characteristics “have come to be accepted as being the skills, knowledge, and capabilities of university graduates, beyond disciplinary content knowledge, which are applicable to a range of contexts.”

Fraser (as cited in Sumson & Goodfellow, 2004, p.332) further defines these student characteristics as “those skills, abilities, and personal attributes that can be used within the wide range of working environments that graduates operate in throughout their lives.” Gibb (as cited in Cushinahan & Tafe, 2009, p.11) concurs suggesting “those skills essential for employment and for personal development, fulfillment, community life and citizenship.” Examples of these student characteristics included: creativity, abstract thinking, conflict resolution, critical analysis, ethics, goal and priority setting, improving own learning, information technology, interpersonal skills, literacy, numeracy, oral communication, presentations, problem-solving, research, self-awareness, teamwork, time management, and writing (De La Harpe et al, 2000, Bath et al, 2004, Robley et al 2005, Tariq et al, 2004).

After much deliberation, the curriculum development committee determined that, in addition to the essential commerce and management topics, seven professional skills were to be integrated in an “across the curriculum” format, embedded in the courses throughout the four years. For MacEwan’s BCom Program, these student characteristics are called “professional skills.” The professional skills are presenting, research, writing, group work, case study analysis, technology, and ethical practice. Also, in the BCom degree there would be one required three credit advanced business writing course in addition to the usual six credits of university English.

Professional Skills and Curriculum Mapping Integration Process

An integrated approach to professional skill development (as opposed to a stand-alone course model) provides a unique challenge for course and program developers. Faculty leadership and coordination is required to ensure that the skills become an integral and important part of the curriculum. To integrate the professional skills into the courses, they need to be aligned with course level learning outcomes and assignment assessments (See Appendix 2). English (as cited in Robley et al, 2005) suggests this is done by having declared, delivered, and learned curricula. Robley et al (2005) added assessed map, as a fourth step in the curriculum mapping process.

To accomplish this, MacEwan’s School of Business developed a systematic approach, which involved the development of benchmarks for each professional skill increasing the scope and complexity across the four years. Faculty course developers originally mapped the professional skills to each course, and after the course was piloted, documented how each of the professional skills related to course assignments and assignment evaluations. Once the core course mapping was complete, faculty in each major needed to review the planned integration for the required courses in the particular major. The academic coordinator facilitated this process by providing and updating curriculum mapping documents based on the course outlines. In reviewing the completed maps, it was easy to see where the particular major was strong or weak in the integration of professional skills. Faculty needed in some cases to review courses and strengthen the learning opportunities for their students in certain professional skills.
Not every course is required to integrate all the professional skills. Faculty chose which skills to integrate according to the content of the courses. Each course is required to include and assess at least one professional skill, but most include several. To show evidence of assessment of the professional skills in assignments, marking rubrics have one section for assessing course content and a second section for assessing professional skills. All professional skills are assessed in the capstone Strategic Management course.

In the second year of delivery, the focus for faculty was on the assessment of the professional skills. It is not enough to just include learning opportunities for students to develop a skill though including it in a course, students need to receive feedback on their development in each area though assessment vehicles. “In order to firmly establish generic skills delivery into the undergraduate curriculum, ensuring that it is valued by all stake holders, it is essential that the programmes designed to deliver them are evaluated with the same rigour and frequency as knowledge based curricula. (Robley, Whittle, & Murdoch-Eaton, 2005). The process of curriculum mapping then requires an initial planning stage in which planned learning experiences are assigned to courses, an implementation stage in which instructors develop and pilot learning opportunities and assessment and then an iterative refinement of the curriculum maps in which assessment in each course is added to the maps. Course leaders aided by the curriculum coordinator and an assigned faculty chose which skills to integrate according to the assignments of the courses.

Performance Benchmarking
One of the first tasks for the faculty after the curriculum committee determined the seven professional skills was to articulate the level of competency in each professional skill that students should attain upon graduation. The next task was to break down the learning into chunks and assign foundational learning to the courses in the junior courses and more complex and integrative learning to the senior courses. To accomplish this work, faculty teams were assigned for each professional skill. In some cases additional college resources were added to the team, for example in the combined “research and writing” team, the librarian assigned to the business school was a member. These teams worked together articulating competencies called “benchmarks” for each skill and then breaking down the learning over three years. In the BCom degree program, most of year one is spent on non-business courses. In year two, most of the foundational learning in the professional skills starts. These draft benchmarks were further refined following broader consultation with faculty. (see Appendix 3 for an example of one of the benchmarks, Technology.)

The key challenge for the faculty teams was to develop explicit learning opportunities in each professional skill in the foundation courses, further develop the application in the senior courses, and finally design a capstone course that provided a forum for students to demonstrate the integration of all the professional skills. The following is a summary of the development to date in each professional skill.

Professional Skill 1: Presentations
Benchmark: Graduates will be able to plan, prepare and deliver a presentation designed to persuade, motivate and/or gather input from an influential group in a business context.
Foundation: In the introductory core courses in management, business law, Canadian business, marketing, and management information systems, students receive guided instruction in developing and delivering presentations. Part of the course mark, is allotted to group presentations (5-10%)
Application: Group presentations in each major senior course are developed from group work assignments. Students present the results of case study analysis, research and strategic analysis. In addition, presenters lead and facilitate discussion of the topics following their presentation.
Integration: In the senior capstone course, Strategic Management, students prepare and deliver a presentation in a competitive environment to the whole B.Com graduating cohort under time pressure. Teams of faculty and industry professionals evaluate these.

Professional Skill 2: Case Study Analysis
Benchmark: Graduates will be able to present a business analysis in a logical, persuasive and professional format incorporating qualitative and qualitative data to support conclusions.
Foundation: In the core introductory courses in accounting, business law, Canadian business, management information systems and management, students are given introductory training in case study analysis. In the Canadian business course, students are introduced to case study analysis and experience a guided process of analyzing Ivey and Harvard cases. In accounting, the final exam includes a set of financial statements that the student must analyze. In business law, students use reported court decisions and hypothetical scenarios as case studies.
Application: In the core operations management course, 75% of the course evaluation consists of problem solving questions. A subset of the problem solving questions is case analysis, which comprises about 20% of the total evaluation of the course. In the core organizational behavior and theory course, students work in groups to analyze case studies and present their findings to their class. In the senior courses in each major, case study analysis is integrate with the content to build skill in analyzing strategy and business problems in each major discipline.

Integration: In the senior capstone course, Strategic Management, students participate in a simulation exercise in which they go through four quarters of a business cycle, analyzing market strategy, pricing, HR etc. The simulation also requires that students integrate the course concepts and the effectiveness of their strategy. A team of faculty and industry professionals evaluates them.

Professional Skill 3: Research

Benchmark: Graduates will be able to locate, evaluate, use and communicate information effectively and ethically. In addition, graduates will be able to support an organization’s strategic initiatives by designing, conducting analyzing and reporting on research.

Foundation: In their first year English course, students are introduced to academic writing. They also learn library research methods on how to locate, document, and integrate material from secondary sources. In their introductory management course students apply these research skills in a business context through a research assignment including an annotated bibliography requirement.

Application: In their senior core courses and their major courses students conduct field research including interviews, organizational analysis, financial performance analysis, marketing analysis and needs assessments. In addition, several courses have academic research paper requirements.

Integration: In the senior courses, research is integrated in the major projects, which typically require groups of students to research and prepare a paper, then present the results of their work.

Professional Skill 4: Writing

The faculty teams did not create a benchmark for writing as they integrated the research and writing benchmarks into most written assignments.

Foundation: In the first year of studies, students are required to take six credits of English in which they develop the academic writing skills they use throughout their university studies. Three credits are devoted to a dedicated academic writing course entitled “Analysis and Argument”, three credits are in a literature course. Emphasis is placed on developing analysis and arguments with appropriate and correctly documented primary and secondary sources. Students also receive a thorough review of grammar and sentence structure.

Application: Writing skills are included throughout the program through ensuring that an adequate number of research papers are assigned in core courses and the major courses. In third year, three more core credits are dedicated to advanced business writing taught by faculty from the Professional Writing major in the Communications department.

Integration: In the senior courses in the major, students are assigned research papers in which they demonstrate skill in the research and analysis required in their discipline and present it using superior writing skills. The capstone course in Strategic Management also has a written component.

Professional Skill 5 Ethical Practice

Benchmark: Graduates will be able to apply ethical principles and frameworks to analyze business problems and issues. Graduates will also be able to articulate personal ethical standards that meet or exceed professional standards in their field.

Foundation: In the foundational courses in accounting, business law, Canadian business, finance, marketing and management information systems different aspects of ethical practice are introduced. In accounting, the importance of audit and professional independence is discussed. In business law hypothetical case study scenarios involve ethics. In finance, agency issues with corporations are explored with examples from Wall Street.

Application: In the core management information systems course, students work with a ethics and IT based case study.

Integration: In the senior core courses and in the major courses, case studies include an ethical component. For example, in the core organizational behaviour and theory course, students work with case studies and apply contemporary organizational behavior theories and business ethics to the analysis of organizations’ initiatives.
Professional Skill 6 Group Work

**Benchmark:** Graduates will be able to work in groups to achieve superior results in completing complex projects in academic and business contexts.

**Foundation:** In their foundational business courses, students study the theory of group process and are required to document and reflect on their small group development. Students use team charters, team process tools including Gantt charts and other tools to assist in managing their group work. The use of these tools is assessed as part of their group work mark. In some courses, team members’ assessment of each individual’s group participation forms part of the grade for the project.

**Application:** In the senior core courses, as well as the major courses, emphasis is on teamwork for projects. Students progressively become more independent in their management of groups, choosing and implementing their own tools and processes for group management. Student group work is supported through the Business Student Centre, which provides dedicated group project rooms equipped with data projection equipment in which students meet and practice presentations.

**Integration:** In the senior capstone course, assigned teams complete against one another in a simulation of a company moving through four quarters of an operation. Students work together to make marketing and HR decisions and together develop and present their strategy and rationale. At this point students are working together seamlessly to develop an industry standard presentation. MacEwan student teams regularly participate in and win national and international Business case competitions.

Professional Skill 7 Technology

**Benchmark:** Graduates will be able to use technology as a tool for learning, communicating and solving business problems. In addition, graduates will be able to assess new technologies and their impact on organizations.

**Foundation:** In the introductory business courses students learn to use accounting software, excel (for budgeting) online databases for research and presentation software. All business courses use a course management system for communication and resources.

**Application:** Students are introduced to management information systems including ERP and learn to manage and control the performance of information systems including the design and use of appropriate performance metrics. In the two probability and statistics core courses, students use software applications for hypothesis testing, graphing, descriptive statistics, sampling, analysis of variance, regression analysis, and forecasting. The core operations management course includes spreadsheet modeling and forecasting.

**Integration:** In the senior core courses, as well as the major courses, students integrate the use of technology with their research, case analysis, group work and presentations. The senior capstone course uses an ERP Simulation and their final project integrates the use of technology.

Evaluation Process.

The focus for the next couple of years will be on the B.Com self-study process, which is part of the five year Alberta Quality Council re-accreditation process that all new degree program undergo. It will be incumbent on faculty to determine what evidence they can use to demonstrate that students are meeting the goals of the program including the development of professional skills (see Faculty Integration Process) This evidence is referred to as “assurance of learning” by AACS (2009). The program intends to develop a variety of success measures and evaluation processes that align with external Business AACS (2009) accreditation guidelines so that some of the preparatory work for future accreditation will be accomplished at the same time.

Future plans may include applying for accreditation by external bodies such as AACS (2009) or European Quality Improvement System (EQUIS) (2009). Having a well-developed, articulated plan for the integration and assessment of the professional skills will assist in MacEwan’s application for accreditation. The existence of clear statements of expectations for students in both content and professional skills will make this process much easier.

Faculty Integration Process

The faculty was involved in each step, from participating in the original curriculum development committee that designed the overall program of study to the on-going refinement of the assessment of the individual professional skills in each course. The involvement of faculty is listed as a distinct component of the process to highlight the importance of planning processes, events, and supports to faculty throughout the various development and implementation stages. If this isn’t done or the momentum is not maintained, this process is at risk of being relegated to the “back burner” in a context of competing priorities.
One group of faculty has undertaken research in the evaluation of the professional skills and has developed a scale for assessment of the seven professional skills (Rezania, Benson, & Buro, 2010). Another group of faculty has undertaken research to assess the effect of a simulation exercise in the capstone strategic management course on the development of students’ professional skills (Boccatto, Bilodeau, Lucyk, & Lehtola, 2010).

To maintain the focus on the integration and assessment of professional skills in an environment of competing pressures on faculty to perform duties in teaching, research and service requires the development of a systematic process involving regular leadership and facilitation from a support team. In the Bachelor of Commerce program at MacEwan this includes the Chair, the discipline leads from each major, a professional skills champion, and an academic coordinator. At MacEwan, School of Business leadership provides resources and time, an academic coordinator provides facilitation support and a faculty member works as a professional skill champion supporting colleagues on a one-on-one basis. In addition, the progress made and innovative teaching practices are shared at annual faculty meetings. These meetings serve to reinforce the importance of the integration of professional skills with existing faculty, introduce new faculty to the work already done and inspire all faculty to learn from each other and work together to further the project.

Successes and Challenges
A number of researchers have noted that integrating professional skills into the curriculum has the following challenges. Some of these challenges include changing teaching from a purely content focus to include a process and skills focus (Medline, Gravves, & McGowan, 2003), lack of commitment by staff in leadership positions, faculty perception of academic freedom, faculty not convinced that part of their role is to teach skills, perceived lack of competence/confidence to teach skills, and academic heads reluctant to champion a project (De La Harpe, Radloff, & Wyber, 2000), confusion around professional skills terminology (Clanchy & Ballard, as cited in Sumision & Goodfellow, 2004), and challenges around mapping (Harden, 2001). MacEwan has overcome many of these challenges through involving faculty in the integration of the professional skills in the curriculum mapping process. However, some challenges remain.

Challenge 1. Terminology is Important
There was a great debate as to whether these seven professional skills should be called “integrative themes” or “professional skills”. The issue was complicated by the need for accreditation review by academics from a university culture in which anything associated with skills and training could be perceived as lacking in appropriate academic rigor. Also, the terms chosen suffered from a lack of easy parallel structure. Presentations, research, writing, and group work seemed to work but technology was often referred to as “technological fluency” and ethics morphed into “ethical practice”. Case study analysis was the most problematic term of all. Faculty intended that the process of case study analysis would be used, wherever possible, to give students the opportunity to apply the theory to real cases. The professional skill, however, most agree should really be labeled analytic thinking, critical thinking, problem solving and/or decision-making.

Challenge 2. Course Assignments and Evaluations Integration
At MacEwan, some faculty members have embraced the challenge of teaching professional skills more naturally than others. In order to give students practice and learning opportunities in developing and implementing presentations, group work, research and technology, faculty most often assign authentic group projects that require, research, writing, and presentations by groups of students. The challenge for course instructors with this type of assessment is the time and effort required for both the students and the instructor. The instructor needs to design the assignments so that the scope is appropriate to the weighting of the assignment, the students need to find time to meet outside of class, the instructor needs to schedule dedicated in-class time for the presentations, and most challenging of all, the instructor needs to be able to create evaluation rubrics which explicitly define the expectations in each of the professional skills. This latter task is one which instructors are often reluctant to do as they feel most comfortable judging the content area and don’t always see the benefit in awarding marks specifically to the demonstration of a professional skill. For example, when a marketing instructor is assessing a student presentation of a marketing plan, criteria will be heavily weighted in the content areas with perhaps a generic 10% for “quality of delivery”. In accounting courses, for example, traditionally assessment is weighted strongly on objective examinations in order to prepare the students for national accreditation exams. In fact, one of the Canadian professional bodies requires a high percentage of the course grade to be on exams in order to credit courses toward the academic component of the professional certification.
**Challenge 3. On-going Support to Faculty**
The School of Business continues to support this project by providing time and resources for discipline leaders, professional skill champions, and the academic coordinator. The project requires significant change facilitation, orientation of instructors, monitoring and mapping activities. The entire BCom faculty and senior administration are involved as judges in the student presentations in the senior capstone course.

**Challenge 4. Ongoing Facilitation and Coordination**
By design, the program started with only two majors, and has now expanded to three majors with three more in the planning stage. This model of incremental growth means that new faculty members come on board every year. The place of professional skills in the program and in the specific courses that new faculty members teach needs to be explained to them and in some instances, a mentoring/coaching model needs to be implemented. As new majors are developed, careful consideration and integration of each professional skill needs to be part of the curriculum development process.

**Challenge 5. Application to Online Delivery**
To provide more choice and access to students, the program has developed and offered most of the key introductory business courses in an online format. Those courses have been assigned the key introductory components of group work and presentations. In addition to the challenges of using group projects outlined above, working in teams to develop and deliver presentations in a distance modality pose unique challenges for both instructors and students. MacEwan’s School of Business is evaluating the feedback from both instructors and students for each online course to determine what went well and what needs improvement. Specialists in distance education and instructional design are working with the instructors to pilot synchronous delivery tools and other communication strategies to enhance the ability of students and instructors to work together in the online courses.

Having identified the continuing integration challenges, it is also important to note some of the integration successes.

**Success 1. Faculty Feedback and Student Learning**
With the integration of the professional skills into the course assignments evaluations some faculty are finding it easier to provide students with feedback because faculty now have less subjective and more objective evaluation criteria. This feedback is allowing students to learn course content better and to further develop their professional skills. Faculty continue to develop learning activities and assessment rubrics for professional skills in existing and new courses. This development is shared informally among discipline groups and more formally at annual faculty meetings.

**Success 2. On-going Faculty Involvement**
Faculty regularly mentor teams of students who excel in annual regional and national business case and international marketing competitions. These competitions afford students the opportunity to polish their professional skills, compete with their peers from other schools, and network with industry representatives who act as judges.

**Recommendations**
Our recommendation to other institutions, administrators, or faculty who wish to integrate professional skills into their curriculum is to follow the five-phase model: 1. Institutional Preparation Process, 2. BCom Curriculum Development Process, 3. Professional Skills and Curriculum Mapping Integration Process, 4. Evaluation Process, and 5. Faculty Integration Process. To assist others in this we have developed a checklist of questions for each phase (see Appendix 4). Our belief is the more the five phases are used during integration of the professional skills, the more successful the integration will be for the institution, administrators, faculty, and students.

**Conclusion**
The development and integration of the professional skills in the Bachelor of Commerce program at MacEwan has been and continues to be an engaging and rewarding curriculum development project for faculty. The process of planning, implementing, refining, and evaluating mirror all academic curriculum development projects. A project of this scope, however requires significant coordination and resources to manage.
References


Figure 1 Bachelor of Commerce Professional Skills Integration Process

School of Business Curriculum Committee 2005

2005

Competency Profile

Professional Skills

Professional Skills identified as:
- Ethical Practice
- Presentation Skills
- Writing Skills
- Research Skills
- Group Work
- Case Study Analysis Skills
- Technology Skills

Performance Benchmarks

Curriculum Mapping of Benchmarks to Courses

Faculty Team Analysis

Documentation

Process for integrating professional skills into planning for new majors, 2009

Documentation of assessment of professional skills in all core business courses

Documentation of assessment of professional skills in major required courses, 2009

In Progress

2007-08

2009
Appendix 1 - A Process Model of Faculty Integration of Professional Skills / Curriculum Mapping

<table>
<thead>
<tr>
<th>Process</th>
<th>Activities</th>
<th>Faculty Integration Process</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institutional Preparation</strong></td>
<td>MacEwan Master Course Syllabi</td>
<td>Developed by Curriculum Coordinator and Course Leaders</td>
</tr>
<tr>
<td></td>
<td>MacEwan history of collaboration</td>
<td>Advisory groups</td>
</tr>
<tr>
<td></td>
<td>School of Business - Common Course Curriculum</td>
<td>Agreement by faculty Developed by Course Leaders</td>
</tr>
<tr>
<td></td>
<td>MacEwan degree guiding principles</td>
<td></td>
</tr>
<tr>
<td><strong>BCom Curriculum Development</strong></td>
<td>Strategic Competitive Advantage Choice</td>
<td>Advisory groups Developed by Curriculum Committee</td>
</tr>
<tr>
<td></td>
<td>– Accreditation, Alberta Quality Council</td>
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<tr>
<td></td>
<td>Learning Outcomes for BCom Program and Courses</td>
<td>Developed by faculty teams and presented in weekly meetings</td>
</tr>
<tr>
<td></td>
<td>– Selection of specific Professional Skills</td>
<td>Developed by faculty teams and presented in weekly meetings</td>
</tr>
<tr>
<td><strong>Professional Skills &amp; Curriculum Mapping Integration</strong></td>
<td>Performance Benchmarks for Professional Skills for each Year of BCom program</td>
<td>Developed by faculty teams and presented in weekly meetings</td>
</tr>
<tr>
<td></td>
<td>Curriculum mapping of Professional Skills to courses</td>
<td>Developed by Curriculum Coordinator</td>
</tr>
<tr>
<td></td>
<td>Documentation of specific Professional Skills to course assignments and evaluations with marking rubrics separating course content from Professional Skills</td>
<td>Developed by Course Leaders aided by Curriculum Coordinator and senior faculty member</td>
</tr>
<tr>
<td><strong>Evaluation</strong></td>
<td>Development and pilot testing of scale for assessing professional skills in current students by year of enrollment by students</td>
<td>Developed by faculty</td>
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<tr>
<td></td>
<td>Faculty feedback on the process of professional skills integration</td>
<td>Developed by faculty</td>
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<tr>
<td></td>
<td>Assessing professional skills in graduate students by students</td>
<td>Developed by faculty</td>
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<tr>
<td></td>
<td>Assessing professional skills in graduate students by employers</td>
<td>Developed by faculty</td>
</tr>
</tbody>
</table>
### Appendix 2 – BCom Professional Skills Assessment Map – 3 Course Examples

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE NAME</th>
<th>ORGA 201 Introduction to Management</th>
<th>ORGA 330 Managerial Skill Development</th>
<th>ORGA 314 Negotiation &amp; Conflict</th>
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</thead>
<tbody>
<tr>
<td>ORGA 201</td>
<td>Case Study Analysis</td>
<td></td>
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<tr>
<td>ORGA 314</td>
<td>Case Study Analysis &amp; Annotated Bibliography</td>
<td>Research Paper</td>
<td></td>
<td>Field Research Paper</td>
</tr>
<tr>
<td>ETHICAL PRACTICE</td>
<td></td>
<td></td>
<td></td>
<td>Field Research Paper &amp; 4 Personal Application Assignments</td>
</tr>
<tr>
<td>TECHNOLOGY</td>
<td>Access databases in Annotated Bibliography &amp; Internet research in Case Study</td>
<td>PowerPoint Presentation &amp; Access databases in Research Paper</td>
<td>PowerPoint Presentation &amp; Internet research in Field Research Paper</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 3 – Technology Benchmarks

Graduates of the MacEwan Bachelor of Commerce Degree will be adept at using technology as a tool for learning, communicating and solving business problems. They will also be able to assess new technologies and their impact on organizations.

Performance Benchmarks

At the end of the first year of the degree the student will be able to:
- Use word processing and document design applications
- Use college on-line resources for research, information and communication
- Use the Blackboard course management system
- Demonstrate a basic ability to solve common desktop software problems
- Assess own learning needs for technology and identify resources to meet those needs
- Use classmates and colleagues as resources to learn about technology

At the end of the second year of the degree the student will be able to:
- Use technology as a research, analysis and communication tool.
- Set up and use the basic functions of a spreadsheet application
- Discuss the use, impact and integration of technology in a business context and relate it to their personal experiences.
- Function as a small group co-leader in using technology within a larger context (e.g. group presentations).
- Identify current and emerging ethical issues related to technology and develop a systematic approach to considering those issues in a business or organizational context
- Describe the benefits to an organization of adopting a particular technological tool.
- Explain the source of negative attitudes and resistance towards technology in the workplace
- Identify the impact of new technology adoption on an organization and discuss strategies to manage the process
- Identify the international contextual variables that affect the development of technology and the implementation of technological change in various parts of the world e.g. physical geography, political boundaries, language, culture, and market philosophy.

At the end of the third year of the degree the student will be able to:
- Conduct an environmental scan and prepare a cost/benefit analysis of new technologies.
- Act as a group resource person for issues related to technology in a group project or presentation.
- Evaluate choices, and provide recommendations, surrounding the use of technology in a business or commercial environment
- Apply ethical models to analyze a particular ethical issue related to technology in an organization and provide recommendations.
- Use technology in innovative ways to achieve learning outcomes.
- Use Canadian and international data to support comparative research for business projects.
- Discuss the current and emerging technological trends internationally and the social, political and economic impact on people and trade. Discuss the impact of contextual variables on the rate of an individual’s technological adaptation.

At the end of the fourth year of the degree the student will be able to:
- Use industry standard business software to solve business problems, research information and communicate efficiently at a level that exceeds employer expectations.
- Approach new and emerging technology in a self-directed fashion.
- Actively seek information about, and assess the effectiveness of, new technologies, in an effort to increase efficiency and competitiveness.
- Select, and plan for the implementation of, technological tools in a business or workplace context.
- Communicate technological issues and concepts to others at a depth and complexity appropriate to the audience’s technological literacy.
- Act as a mentor and coach to colleagues in the use of technology to solve business problems
• Articulate the ethical issues surrounding the use of technology (such as privacy, security and surveillance) and make well-informed decisions and recommendations regarding ethics and technology.
• Express a can do / no problem attitude towards technology.
• Determine global technological differences and adjust business decision making to account for those differences.
• Use any specific technology required in the graduates’ major discipline of study.
• Explain the use and potential application of all current and emerging industry standard technology related to the major field.

Appendix 4 – Checklist for Assisting Program and Course Professional Skills Integration

1. Institutional Preparation Process
   • University Master Course Syllabi
     o Does your institution have a flexible, yet structured Master Course Syllabi showing types of assignments, distribution of grades for assignments, and course textbooks?

   • Faculty Agreement on Common Course Curriculum
     o Does your institution, school, or department have faculty agreement on the use of a common course curriculum? This means the same course uses identical textbooks, assignments, and assignment rubrics.

   • External Advisory Groups.
     o Does your institution, school, or department have external advisory groups, which provide it with feedback on a regular basis?

   • Institution’s Guiding Principles
     o Has your institution provided guiding principles for your program development, professional skills, and curriculum mapping?

2. Program Development Process
   • Specific Program Learning Outcomes
     o Does your institution, school, or department have specific program learning outcomes?

   • Specific Courses Learning Outcomes
     o Does your institution, school, or department have specific course learning outcomes?

   • Student Competency Profile
     o Does your institution, school, or department have a Student Competency Profile?

   • Selection of Professional Skills
     o Will your institution, school, or department select a realistic/manageable number of professional skills for integration into the program and courses?
3. Professional Skills Integration/Curriculum Mapping Process
   • Performance Benchmarks of Professional skills for each Year of the Program.
     o Will your institution, school, or department select progressive performance benchmarks of the professional skills for each program year?
   • Curriculum Mapping of Professional Skills to Courses
     o Will your institution, school, or department select progressive performance benchmarks of the professional skills for each course?
   • Curriculum Documentation of Specific Professional Skills to Course Assignments & Assignment Evaluations
     o Will your institution, school, or department document the specific professional skills for each course assignment and assignment evaluation using marking rubrics with a section grading course content and a separate section grading professional skills?

4. Evaluation Process
   • Assessing Professional Skills of Current Students by Year
     o Will your institution, school, or department develop a scale for assessing professional skills in current students?
   • Faculty Feedback
     o Will your institution, school, or department gather faculty feedback on the process of professional skills integration?
   • Assessing Professional Skills of Graduate Students by Graduate Students
     o Will your institution, school, or department develop a scale for assessing professional skills in graduate students by graduate students?
   • Assessing Professional Skills in Graduate Students by Employers
     o Will your institution, school, or department develop a scale for assessing professional skills in graduate students by employers?
   • Review of Professional Skills Integration
     o Will your institution, school, or department develop a methodology for reviewing and assessing student learning of professional skills integration in the program and courses?
Teaching Ethics on Hybrid Business Information Technology Courses

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Abstract: This paper examines the pedagogical issues involved in teaching and assessing ethics on Business Information Technology (BIT) courses in Higher Education. BIT courses aim to produce graduates who possess the technical and business competences necessary to develop and advise on the implementation of information and communication technologies (ICT) within organisations. It is suggested that the centrality of ICT to operational and strategic functioning, and potential misuse of ICT, has elevated the importance of ethics on BIT courses. The paper considers the range of topics that may be included in the BIT ethics curriculum, methods of delivery, the problems of assessing ethical competence and the challenges tutors face teaching ethics. The final section proposes an agenda for research on teaching and learning about ethics.

Introduction

There has been a tremendous growth of interest in ethics and corporate responsibility in recent years (Khan and Atkinson, 1987; Bowd, Bowd and Harris, 2006; Estallo, 2007; Idowa, 2008). This is due partly to the publicity attending various high-profile corporate scandals and partly to growing awareness of the potentially negative impact of multinational corporations on the environment and the communities they serve (Schwartz and Gibb, 1999; Spence and Gray, 2007). Business schools have responded to these concerns by integrating ethics into mainstream teaching and introducing specialist courses in corporate governance, social responsibility and environmental sustainability (Christensen et al, 2007; Gentile, 2009; Paton, 2010). Teaching ethics, however, is a formidable challenge and a huge responsibility. The challenge is arguably greater when students are studying business combined with other academic disciplines that have their own professional standards and value systems. Even if there are no inconsistencies in the different standards and value systems, students must somehow absorb and integrate discrete bodies of ‘ethical knowledge’ and behave in ways that meet the professional standards of different discipline areas.

Those who opt to study Business Information Technology (BIT) offer a case in point. BIT courses proliferate in universities and institutes of Higher Education in the UK. Their aim is to develop ‘hybrids’, i.e. managers who can use their knowledge of IT to enhance business performance. The pervasive nature of IT and its criticality to business operations and strategic decision-making has increased the importance of ensuring BIT students understand possible abuses of IT and their ethical obligations to various stakeholders. At the same time, they need to be conversant with the general ethical/social issues which graduates of any business course might expect to find useful, e.g. transparency in reporting procedures, equal opportunities, etc. Aside from the issue of what to cover, tutors face challenges teaching and assessing ethics on BIT courses. There is little research on the methods most likely to influence ethical conduct and no guarantee that any grade assigned will accurately predict ethical behaviour in real life.

Given the centrality of IT to business operations, and indeed the wider society, there is a need for a clearer understanding of how to integrate ethics into the curriculum and deliver and assess it in ways that ensure BIT graduates possess relevant ethical competencies. This paper considers some of these issues in more detail. The section below places the discussion in context by providing background information on BIT courses and the role of ethics in the curriculum. This is followed by a review of what could potentially be covered in the BIT ethics curriculum and some of the ways in which this may be delivered to encourage deep learning about ethical issues. A section is included on the types of assessment that could be used and the difficulties of making judgements about ethical learning and conduct. The paper concludes by highlighting the ethical issues confronting tutors themselves and suggests an agenda for research which will help to provide a better understanding of the moral and practical issues associated with teaching ethics on hybrid courses.

Ethics and BIT Courses

BIT courses began to emerge in the early 1990’s in the UK largely as a response to the British Computer Society’s (BCS) call for a new breed of ‘hybrid managers’. These are: “technical people able to work in user areas doing a line or functional job but adept at developing or supplementing IT application ideas” (Earl, 1989). According to Earl and Skyrme (1990) hybrids require the following competencies: Business Knowledge (general business knowledge; knowledge about a firm’s markets, products, competitors) Organisation Specific Knowledge (culture, structure, processes, key people in the organization); IT knowledge/experience (experience of managing projects; awareness of
existing/potential applications of IT in the organisation; knowledge of who can provide specialist expertise) and Management Skills (change management skills, conceptual skills; leadership skills; interpersonal skills; team/peer group skills; communication skills). There is no mention of ethical competencies, though this might be inferred from the nature of the hybrid’s role as a ‘visionary leader’ and ‘change agent’.

Rapid advances in IT in the 1990’s and early years of the new century increased demand for hybrids in industry. Academia responded by creating a wide range of courses in BIT, Business Computing and IT Management. Forty-four institutions in the UK currently offer undergraduate and postgraduate BIT-style degrees. They vary enormously in content depending upon whether the onus is on systems development or business management of IS/IT systems in organizations. Guidance on content can be found in the General Business Management and Computing subject benchmark statements but these will be combined in various ways to produce quite different offerings, depending on the expertise of staff, type of courses already offered and regional skill requirements.

Both the Business and Computing subject benchmark statements refer explicitly to ethical issues. The Business Statements stress the need for knowledge and understanding of: “the development, management and exploitation of information systems and their impact on organizations” and pervasive issues such as “sustainability, corporate responsibility, diversity and innovation”. The Computing Benchmark Statements highlight the importance of students understanding “professional, economic, social, environmental, moral and ethical issues involved in the sustainable exploitation of computer technology”. The importance of understanding relevant legislation and being conversant with good professional practice also features in the Business and Computing Benchmark Statements.

The issue of where in the curriculum such a diverse array of topics could potentially be taught has received little attention but preferred practice on Business Studies courses is to integrate ethics in every unit, i.e. teach it across the curriculum so that students see its relevance in all the different subjects they study. Research by Christensen et al. (2007) on approaches to teaching ethics, CSR and sustainability on the world’s 50 top MBA programmes, for example, found 55% of institutions were attempting to implement ethics teaching across the curriculum: 25% offered stand-alone units. The same ought also to hold for the BIT curriculum at postgraduate and undergraduate levels. There is a case, however, for introducing basic concepts in a Professional Issues Unit early on in an undergraduate course. In a paper on using computer-based simulations to teach business ethics, Schumann et al. (1997) observe that outlining ethical concepts prior to giving students a simulation exercise may increase the likelihood that they will recognize ethical dilemmas and apply appropriate theories. A stand-alone unit may also flag the importance of ethics and professionalism to students in a way that may be difficult if it is ‘tucked into’ other units, especially electives.

Curriculum Content

The subject benchmark statements and codes of professional conduct provide guidelines on possible topics for inclusion in a BIT ethics curriculum. This section considers some of these topics in more detail and highlights new areas that warrant special consideration. An important topic for inclusion in any BIT curriculum is the law relating to data protection, intellectual property rights and software misuse. BIT graduates are likely to be developing and managing systems that maintain confidential data so they need to be aware of the penalties for lapses in security. In their future role as managers, they may have responsibility for staff so awareness of equal opportunities, human rights and health and safety legislation may also be considered essential. Ideally the ethics curriculum will go beyond encouraging mere compliance with the law but motivate students to be proactive in promoting it at work, e.g. identifying imaginative ways of raising security consciousness in organizations, giving under-represented groups in IT opportunities to work on projects that will contribute to their continuing professional development (CPD).

The subject benchmark statements and professional codes highlight the importance of a range of personal competencies which underpin effective performance such as keeping professionally updated, managing workload, refusing tasks that are beyond current levels of competence etc. The BIT curriculum ought to provide opportunities for students to reflect on these competencies and experiment with strategies for self-development. The growing emphasis on personal development planning (PDP) in most institutions has made this easier but the ethical dimension may be overlooked because personal competencies are not seen as impacting on others. Of course, this is far from the case. If a student is unable to manage their time and workload in a group assignment, or takes on work they lack the skills to complete, this usually undermines the performance of the group as a whole. Self development benefits others as well as oneself.

The core of the BIT ethics curriculum will relate to what the BCS Code of Conduct terms the “responsibilities practitioners undertake on behalf of their organization, its stakeholders and the wider society”. This could encompass an extremely wide array of issues, e.g. the development and maintenance of safe systems, detecting
and fighting cyber-crime, advising clients about the potential drawbacks and limitations of new systems, implementing and observing quality assurance measures on projects, educating senior managers and others about the role of IT, potential abuses of the technology and reducing the adverse impacts of technological innovation. Two areas that are relatively ‘new’ and warrant close attention are cloud computing and the move towards ‘green computing’.

Cloud computing, i.e., internet delivery of computing services has its origins in outsourcing but is being promoted as an alternative paradigm which will greatly reduce organizational costs and increase flexibility (Buyya et al., 2008; Maggiani, 2009). Many commentators are skeptical about cloud computing, arguing that it has environmental costs and is a security nightmare (Schmidt, 2010; Knights, 2009). BIT students need to be able to evaluate the ethical and business case for cloud computing and other emerging technologies if they are to meet their professional obligations once employed. Green computing is less controversial, though it could be argued that the use of smart technologies, for example, to manage energy more efficiently distracts attention from the real issue, i.e., encouraging people to make less use of resources. In their future role, BIT graduates will be involved in making decisions about the procurement, use and disposal of computer systems so it is important they are aware of the environmental impact of IT and the need to promote sustainable computing in the workplace (and at home).

Examination of the above topics is likely to make more sense to BIT students if they possess the tools for critical analysis. This raises the question of whether the curriculum should include ethical theories. The literature on business ethics pedagogy suggests there may be advantages in teaching ethical/moral theories (Schumann et al., 1997; Galbraith and Webb, 2010). The problem is that there are very many to choose from - Kantian Ethics, Utilitarianism, Computer Ethics, Information Ethics Kohlberg’s Stages of Moral Development to mention but a few. Where ethics is taught as a separate unit on a BIT course there may be scope to cover at least some of these different viewpoints. It would certainly seem appropriate to give students exposure to contrasting moral philosophies – the Utilitarian idea of making decisions on the basis of weighing the likely costs and benefits of a particular action compared with the Kantian idea of respecting the supreme worth of every human being and discerning the right course of action through a process of reasoning.

Teaching Ethics

There is considerable debate over whether ethics can actually be taught (Gundersen et al.; 2008). Research has produced mixed findings but there is some evidence that exposing students to ethical issues can encourage attitudinal change (Staehr and Byrne, 2003; Siemens and Kopp, 2006; Templin and Christensen, 2009). However, what is learned is far more important than what is taught: different students will learn different things and at different rates. It follows that student-centred, experiential approaches are more likely to promote learning than, say, didactic models. This seems to be the view of the majority of business schools where instructional techniques include case studies, vignettes, group discussions, business simulations, role play and work experience in the community (Lampe, 1996; Schumann et al., 1997; Weber and Glyptis, 2000, Galbraith and Webb, 2010). Many writers observe that it is important that the methods employed involve students at an affective as well as an intellectual level and encourage them to see the link between actions and consequences (Schumann et al., 1996; Lampe, 1997; Griseri, 2002; Christensen, 2007). The actual teaching/learning method adopted, however, is bound to be influenced by the characteristics of the student cohort, specific learning outcomes to be attained and tutor’s confidence in the use of different techniques.

There is very little on what teaching techniques may be appropriate for BIT students but the author’s own experience suggests that a combination of DVD, discussion and scenario analysis can help to heighten awareness of ethical issues. This has been found most fruitful where students have a theoretical framework within which to analyse issues and where there is active encouragement to articulate the consequences of particular moral choices. Baetz and Carson (1999) draw attention to the scope for using students’ actual experience in discussing ethical issues. Though potentially enlightening and valuable, this can also have undesirable consequences: they may, for example, expose other people to criticism without their knowledge or consent. A way round this is to encourage students to refer anonymously to people or events that have shaped their own moral understanding; this has the additional virtue of encouraging them to respect others’ privacy.

Assessment

It is far easier for the BIT tutor to assess knowledge and reasoning skills than it is to assess student behaviour, particularly when it puts the tutor in the invidious position of judging someone else’s morals. The General Business Management Subject Benchmark Statements accept that there are in fact some ‘skill components’ that are extremely difficult to assess. The aim of any ethics programme is surely to encourage students to think and act more ethically...
but what does an ‘A’, B or ‘C’ grade mean and what impact does the assignment of a grade have on the student who will have that grade permanently recorded on their file – and employers who will look at the file and may make an employment decision based on it?

The difficulties of assessing ethics in the Computing curriculum is the subject of a very interesting paper by Moskal et al (2002) who advocate using a standardized rubric in assessment in essays – a key method of assessing moral judgment. The virtue of this tool is that it helps to standardises the way different tutors may mark the work and the rubric can also be used to grade and track students’ knowledge development as they progress through the course. The rubric Moskal et al describe could presumably be applied to other forms of assessment including presentations, computer-based simulations and role play though the interactive nature of these exercises can pose problems that need careful consideration.

All this effort is worthwhile if it really does lead to changes in students’ attitudes and behaviour. As indicated earlier, there is some evidence to suggest that teaching and assessing ethics can lead attitudinal change at least in the short-term. Straehr and Byrne (2003) used the Defining Issues Test (DIT) of moral judgment with a group of computer students who had been taught ethics and those who had not. Students who received some tuition in ethics exhibited “a significantly larger increase in moral judgment development” than the control group who had received none. Interestingly the improvement was most marked amongst female students. A study by Siemens and Kopp (2006) also found that students who attended a University-sponsored ethics education programme were more critical of digital copyright infringement on campus and that reinforcement of the message increased disapproval. Of course, this does not predict actual behaviour or behaviour in the ‘real world’. Given this, and the moral complexities of assessment, perhaps the wisest course of action is not to assign a mark to ethics per se but to assess measurable components of professional behaviour, the demonstration of which reflects ethical competence.

### The Role of the Tutor

Teaching ethics on BIT courses poses a number of dilemmas for tutors. Firstly, it requires expertise in many different areas, not just business and IT. A tutor almost certainly needs some grounding in moral theories. For anyone who has not studied moral philosophy, acquiring the relevant body of knowledge may be a daunting and time-consuming task. If one accepts that an understanding of ethics is useful across the curriculum, however, the benefits certainly repay the effort expended. Secondly, BIT tutors will have their own moral code which is bound to influence the way they teach. It could be argued that students holding contrary views may be placed at a disadvantage. A way of dealing with this may be for tutors to be explicit about their values and to monitor their behavior very closely to ensure the classroom remains a forum for democratic debate. A third problem is related to the second. Not all ethical concerns can be addressed in the BIT curriculum. In practice tutors are likely to select at least some topics on the basis of personal preference and expertise: this may not always reflect what students actually need to know. Agreement at course and programme level on what should be covered may help to resolve this problem provided someone is monitoring coverage in different units and units are evaluated for ethics content. Finally, teaching ethics requires tutors to model good practice themselves. Social learning theory would suggest that students may learn more from observing tutors and significant others than any number of exercises. Lampe (1997) has some useful advice to offer in this regard. Tutors should seek to behave well but take responsibility for their own lapses, thereby modeling realistic behaviour to students. However, they should not acquiesce to ethical relativism which could be used to justify bad behaviour on the students’ part.

### Conclusion

This paper has reviewed some of the issues involved in teaching ethics on hybrid BIT courses. It has been argued that the area is fraught with difficulty because of the cross-disciplinary nature of the subject and the difficulty of teaching and assessing ethics. Tentative suggestions were made with regard to coverage of topics in the BIT ethics curriculum and the methods used to deliver instruction. It was suggested that students need to be provided with analytical tools to assess ethical dilemmas and that emerging trends such as cloud computing and green computing should be included as organizations urgently need guidance in these areas. In terms of delivery methods, experiential and student-centred approaches appear to more appropriate than traditional approaches because they involve emotional engagement but it is difficult to gauge the extent to which any approach will change attitudes and behavior in the long-term. Assessment of such a subjective area is complex and morally demanding for tutors. The use of rubrics was considered and the possibility of focusing on aspects of professional behavior which can be more easily measured, e.g. procedures for dealing with a problem and rigor of moral reasoning. There is very little research on the issues raised in this paper. To conclude, it is suggested that there is an urgent need for empirical studies in the following areas:
content of ethics curricula on BIT courses and factors that determine the selection of topics. The paper proposed that choice is influenced by the subject level descriptors, professional codes, existing course offerings, staff expertise or interests and regional skill requirements. It would be interesting to know which of these factors is most important and whether there is in fact a degree of consistency between institutions in the inclusion of certain topics, i.e. some are considered so important they must be covered in detail;

(2) degree of integration of ethics into the curricula, i.e, whether ethics is taught exclusively in one unit or seamlessly integrated across the curricula or both. Research on ethics on Business Studies courses suggests the latter model is most effective – it would be useful to know whether there is a ‘prevalent’ model on BIT courses and how effective this model is in the eyes of different stakeholders;

(3) extent and nature of differences in taught material and delivery between undergraduate and postgraduate courses. Although postgraduate Computing students are likely to be familiar with the ethical issues associated with BIT, students coming from a non-IS background may lack underpinning knowledge. It would be useful to know how tutors cater for the diversity of backgrounds on postgraduate courses, whether topics covered differ substantially from undergraduate courses and the level of abstraction involved;

(4) methods of delivery used on BIT courses, particularly preference for particular teaching techniques. This paper has argued strongly for experiential and social learning approaches which encourage reflection, action and learning from past experience and others’ experience. It would be instructive to find out whether, and to what extent, these techniques are adopted and their merits/demerits compared with more traditional approaches;

(5) assessment of ethical knowledge and skills on BIT courses. It has been argued that assessment of ethics is inherently very difficult. Research is needed on the methods of assessment used on BIT courses and whether those involved feel the results really do reflect a level of ethical competence;

(6) tutors’ value systems. It was suggested earlier that tutors are not value free. Given that they have some measure of discretion over what is taught and how it is delivered, it would be interesting to explore the nature of tutors’ value systems and how these actually impact on students’ learning experience.

(7) international variations in the content, delivery and assessment of ethics on BIT courses and students’ attitudes and value systems. As students and staff increasingly operate in a global market place characterized by very different cultural assumptions and norms about appropriate behaviour in differing contexts, it would be of practical value to identify and compare differences in approach to integrating ethics into BIT-style courses in various parts of the world.

A more detailed understanding of some of the issues raised above would add considerably to our knowledge of the way students learn about ethics on hybrid BIT courses. This would be valuable not only to students who will have to contend with the complex ethical issues presented by advances in IT but to organizations that are increasingly dependent on their expertise and guidance.

References


Developing an innovative informal learning capability for sector-wide management education

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Objectives or purposes of the proposal
This paper reviews the educational design of an e-learning network (knowhownonprofit.org) designed specifically for innovative management education in the broad voluntary and community sector in the UK. This project is aimed at the majority of the sector who, because of cost or time concerns, or for other reasons, make little or no use of traditional formal approaches to learning or even access short training courses.

Perspectives on practice or theoretical framework
There have been numerous critiques of an overemphasis on formal learning, particularly in the field of training that is combined with everyday work. Therefore the central educational philosophy chosen for the network is based on informal learning (Cross, 2006; Konrad, 2005). But as the project design proceeded it became apparent that elements of formal learning would also be required, and that a range of approaches across the spectrum of formal and informal learning would be needed. It is interesting that several of the developers of this project had considerable experience of conventional formal management and professional education, but unknown to each other shared a common interest in one of the most radical critics of formal education (Illich, 1973).

Methods or Modes of Inquiry, or Evaluation of Practice
This is an action research project with one of the two authors being involved as a participant-observer in the project, while the other is independent of the project. The research reviews some of the key assumptions of the project:

1. Learning elements were classified into three "zones" covering formal, informal, and "semi-formal" approaches
2. Open Educational Resources (Downes, 2007), which at the time of the project development were on a seemingly ever upward trajectory, would believed not likely to play a central role in meeting needs for large scale informal management learning
3. There was a strong preference for an architecture based on open source technology, and on a flexible content management system rather ran a conventional e-learning platforms
4. It would be feasible to develop upwards of 20 communities of practice which would lead the development of user-generated content after an initial period of using formally produced content.

These assumptions were reviewed at the mid-point of the project (18 months into a three year project), with the intention of determining what direction should subsequently be taken. An agile approach had been adopted to development of the network to allow for changes in direction in the light of experience.

Data sources or evidence of trends and issues identified
Both quantitative and qualitative data has been drawn primarily from the actual operation of the website, which includes a considerable quantity of material derived from Google Analytics. There have also been interviews with key stakeholders in the project. Quantitative data is useful in identifying the level of use of the network, and which parts of it have proved most popular, while the qualitative data focuses on perceived trends and experiences. It is already apparent that the network has attracted a considerable number of users from different parts of the voluntary sector.

One of the most noticeable features of the progress of the project is how quite major developments have arisen which were completely unpredicted (and most likely unpredictable) when the project went live. This adds force to the technological trajectory of the project which was essentially incremental rather than "big bang", being based on continual small improvements to a flexible core approach. This supports the notion of "bricolage" as a pillar of information systems design, and equally applicable to e-learning. (Ciborra 2004)

The research examines in some depth one particular such unpredicted innovation which took place, namely the evolution and implementation of a "management soap opera". This contains both formal and informal elements,
since it is used to encourage informal dialogue among users of the network. It is a web-based, text-based, set of tales about realistic management problems situated in a fictional town in which are a variety of problematic charities and charity leaders. It follows all the conventions of a traditional soap opera, except that the purpose is explicitly to raise issues and prompt debate about how to handle contemporary management problems. Although the use of fiction to delineate management problems is by no means new (Brawer, 1999; Grey, 1996), this is one of the first occasions where this format has been applied to management development.

Conclusions and Implications for Research and Innovation of Practice
Given the importance of the unpredictable, it is clear that projects which are funded under highly formalised funding regimes, as this one was, really do need to have more explicit mechanisms for amending workplans and targets in the light of what develops in actual practice.

The growth of wholly online learning approaches offers a potentially vast amount of data to the educational researcher. In this project there has been a preoccupation with exploiting a wide range of available data to understand user behaviour and, given its funding arrangements and accountability, to evaluate the project. Many of the data needs of researchers have thus been met as a simple by-product of what was needed for management of the project. We have not necessarily always noted such attention being paid to data collection and exploitation within, say, university virtual learning environment projects.

The project developed from a partnership between an academic institution which was almost totally based on formal face-to-face learning, and a professional body. Much has been learnt about the implications of the roots of both organisations and their impact on a project which sets out to be experimental and innovative.

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Applying the Development Centered Paradigm in a Business Ethics Course

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Abstract: The Development Centered Paradigm (DCP) has three core principles: (1) human development begins with the learners’ interests, curiosities, and talents; (2) learners determine the content that they will master and the methodology for mastering that content; and (3) as learners master their self-determined content through their self-determined learning methods, they develop into more functionally mature individuals. This paper describes an application of these three DCP principles in a business ethics course. The application involves student-led facilitation sessions where the students are granted extraordinary freedom to design and execute class sessions that address important contemporary business ethics issues. The paper also presents a representative summary of student feedback regarding the impact of the DCP-based, student-led facilitation sessions on their personal learning, growth, and development. Student feedback regarding the value of this approach relative to other teaching/learning approaches is reported as well.

Introduction
The education enterprise has been dominated by two models throughout its long history. One model—the Teaching (or Teacher) Centered Model (TCM)—dominated education from its inception until well into the 20th century. The other model—the Learning (or Learner) Centered Model (LCM)—has gained increasing popularity in the past few decades. TCM “places control for learning in the hands of the teacher” (Brown, 2003, pp. 50-51), and students “have mastered a set of rules that privileges teacher action: get the right answer (the teacher’s answer); expect every action to merit some tangible reward from the teacher (points or extra credit); work just enough to earn the grade you desire, as defined by the teacher’s standards” (Mezeske, 2004, p. 1-1). In contrast, LCM—which exists in many incarnations, including problem-based learning, inquiry-based learning, competency-based learning, constructivist designs of curricula, and project-based learning—emphasizes the learner and provides greater student control over the focus and content of their learning projects while providing (just-in-time) teaching and training ‘on the side’ (De Bie & De Kleijn, 2001; Kunkel, 2002; Van Merriënboer, 1997).

McCuddy and Reeb-Gruber (2008) argued that both TCM and LCM suffered from deficiencies with regard to educational design, implementation, and outcomes—and that TCM was much more problematic than LCM. They further argued that because of these deficiencies a new educational approach—one that transcends TCM and LCM—is needed. This new approach, called the Development Centered Paradigm (DCP), focuses on learner development and the naturally and universally occurring process by which human beings develop into functionally mature adults.

LCM and DCP do share some commonalities—both focus on learners and their learning (or development)—but there are substantive differences between them as well. LCM is structured from the institution’s/designer’s point of view and then tries to take the students’ prior knowledge and experiences into consideration in the design and execution of the learning activities. DCP, in contrast, starts with each learner’s interests, curiosities, and talents, then permits the learners to design appropriate learning experiences to foster their development around those interests, curiosities, and talents. DCP also differs from LCM in that it capitalizes on the naturally and universally occurring process of human beings developing into functionally mature adults. All human beings move from a state of immaturity to maturity during their physical, psychological, and intellectual development. This natural developmental process informs DCP from a theoretical perspective, and enables learners—most often through self-direction but sometimes under the guidance of teachers or other experts—to create educational opportunities that capitalize on their interests, curiosities, and talents. Through active personal management of their own learning, people move toward fuller attainment of the capacity to live as functionally mature individuals (McCuddy & Reeb-Gruber, 2008). Thus, while both LCM and DCP focus on the development of the learners’ competencies, they are different in their assumptions and approaches.

The central focus of DCP is on human development, which itself enjoys a rich and diverse history. Human development has been explored from numerous perspectives, including psychoanalytic, behavioristic, and humanistic views on becoming “fully human” (Lugo & Hershey, 1974); immaturity versus maturity in human development (Allport, 1961; Argyris, 1957; López, 2007); and cognitive moral development (Gilligan, 1982; Kohlberg, 1976,
Collectively, these different perspectives inform us regarding the richness and complexity of the human development process—a process that every individual experiences.

A key element of humans developing into functionally mature individuals—which is the desired outcome of DCP—involves moral development. Moral development “refers to the growth of moral understanding in individuals. In this respect it concerns a person’s progressive ability to understand the difference between right and wrong, to care about the difference between them, and to act on the basis of this understanding” (Parker, 1998, p. 267). Moral development is of particular relevance to the educational application being discussed in this paper, which reports on a learning approach used in a business ethics course wherein major emphasis is placed upon the moral development of students.

**Nature of the Business Ethics Course**

The course being addressed in this paper is entitled *Ethics in Business* and is offered to both advanced undergraduate students in a college of business and masters level students in a college of arts and sciences. The course is offered every autumn term, and it meets twice a week for a total of 29 class sessions. Each class session meets for 75 minutes. The process described herein has been used for several years. However, in the most recent iteration of the course, the professor solicited student feedback regarding a major DCP-based component of the course. The evaluative data reported in this paper focuses on experiences during the autumn term (from late August through early December) of the 2009/2010 academic year, during which 11 undergraduate students and 3 graduate students were enrolled in one section of the course, and 12 undergraduate students and 5 graduate students were enrolled in a second section of the course.

The course is divided into two major phases of learning activity. The first phase, consisting of 17 class sessions, focuses on developing students’ awareness and knowledge of various ethical concepts and theories, and their ability to apply those concepts and theories to dealing with a variety of ethical dilemmas. This phase of the course is led and facilitated by the professor, using lectures, discussions, and debates as the primary teaching/learning techniques. The second phase, consisting of 12 sessions, puts students in the role of leading and facilitating class sessions that focus on major ethical issues in contemporary businesses. This phase has been specifically designed in accordance with the key principles of the Development Centered Paradigm.

**Applying DCP in the Business Ethics Course**

The learning approach described herein seeks to apply, at least to a reasonable degree, three key principles of DCP. First, human development begins with the learners’ interests, curiosities, and talents. Second, learners determine the content that they will master and the methodology for mastering that content. Third, as learners master their self-determined content through their self-determined learning methods, they develop into more functionally mature individuals. In order for the reader to understand how the second phase of the course applies DCP principles, I must first describe the nature of the developmental activity that occurs during this course phase.

**Course Activities**

In preparation for the second phase of the course, six student groups, with as equal a number of members as possible, are formed in each course section. The group formation takes place during the second class session of the first course phase so that the students have ample time to prepare for the facilitation activities which take place during the second phase of the course. Each student group is responsible for facilitating the seminar discussion on two contemporary ethical issues in business, selected from a pool of six such ethical issues. Each ethical issue is covered by two groups; thus, two class sessions are devoted to each issue, with one session being facilitated by one student group and the second session being facilitated by a different student group. Consequently, the last six weeks of the course puts student groups in charge of the learning process for themselves and their fellow students, and each group is in charge of two different 75-minute class sessions devoted to two different ethical issues.

The ethical issues that are addressed include the following: human resource management, accounting and finance, marketing and advertising, environmental stewardship, technology in the workplace, and moral leadership in business. The student groups are asked to express a first, second, and third preference regarding the ethical issues on which they wish to work. As much as possible, student preferences are honored so long as all six ethical issues are covered twice and each group has two different issues. Determination of which issues a given group works on occurs during the class session when the groups are formed.

The purpose of the facilitation activity is to help the seminar participants to profoundly explore and grapple with the ethical issues. The facilitating group is charged with actively engaging the seminar participants in learning
about business ethics from the perspective of the assigned topic/issue. The facilitating group is expected to challenge the other class members to confront their own ethical ideas and principles, and to examine and understand the ethical ideas and principles of other people. The student groups are not restricted in any way — other than reasonable boundaries of social decorum and civility — in how they attempt to engage and challenge the seminar participants. They are encouraged to use their creative capacity as they seek to engage the other class members in interesting and meaningful dialogue and learning. The two groups assigned to each issue must also coordinate with each other so that both groups do not cover the same territory. Overlap of topical material between the two sessions must be minimized, and preferably be totally eliminated. Each of the six issues-oriented topics is broad enough to accommodate not only two but numerous class sessions with distinctly different content.

What has been described in the preceding paragraph constitutes the entire teaching and supervisory direction that is provided to the students for their facilitation projects. They are on their own to do research on their issues, plan out content and learning activities of their two sessions, and execute their two sessions. The students know that the professor is available for consultation and help, but that they must take the initiative in seeking such input.

Typically, the student groups will blend a PowerPoint presentation with a variety of other learning activities. The PowerPoint presentations are normally used to convey essential information about the ethical issues. Some of the more innovative learning activities have included adaptations of game shows, simulations, role playing situations, use of video materials, ethical scenarios and cases, guest appearances by managers, and debates, to name several.

During the student-led facilitation phase of the course, the role of the professor — other than providing guidance and input when sought — is twofold. First, the professor becomes an active member of the audience — essentially acting as another seminar participant experiencing the learning activities. Second, the professor takes notes on content, facilitation skills, engagement of seminar participants, vibrancy of the discussion, etc. in order to provide each student group with feedback that is both evaluative and developmental.

**Connecting Course Activities to DCP Principles**

Matching student interests as much as possible with the contemporary ethical issues reflects the DCP principle that human development begins with the learners’ interests, curiosities, and talents. Students can work on two ethical issues in which they are interested and of which they probably have some knowledge; thus, engagement in the learning process should be more intense and productive. Granting the students considerable freedom in constructing their learning environments (i.e., the content of the facilitation sessions and how those sessions would be executed) reflects the second DCP principle of learners determining the content that they will master and the methodology for mastering that content. Expecting, indeed requiring, the students to meaningfully grapple with a variety of ethical issues in contemporary businesses reflects the third DCP principle — namely, that as learners master their self-determined content through their self-determined learning methods, they develop into more functionally mature individuals.

**Student Reaction to the DCP-Based Approach**

At the end of the most recent term in which the *Ethics in Business* course was taught, the professor invited students to provide “honest, unvarnished feedback regarding their assessment of and reaction to the student-led facilitation sessions that they experienced during the last six weeks of the semester.” Providing such feedback was entirely voluntary since the request for input was made at the conclusion of the last facilitation session and would require students to provide the feedback during final exam week. Asking for input earlier would not have been appropriate given that students had not had the full experience of the facilitation sessions until the conclusion of the semester.

The students were asked to address three diagnostic questions, providing a one or two paragraph response (or longer if the spirit moved them) to each item. The three diagnostic questions were:

- From the perspective of preparing for and facilitating the two class sessions for which your group was responsible, describe how those experiences contributed to your personal learning, growth, and development.
- From the perspective of being an audience member during 10 of the 12 facilitation sessions, describe how those experiences contributed to your personal learning, growth, and development.
- How does your learning, growth, and development under the student-led facilitation session format compare to your learning, growth, and development under other teaching/learning formats (e.g., straight lecture, problem solving, research projects, etc.) that you have experienced during your college career.
The students were instructed to send their responses to the professor via e-mail. Since they were asked to provide input as they were embarking on final exam week, the professor offered a small incentive for their participation—a bonus of 1.0 percentage point to the students’ final calculated course percentage. The bonus could have made the difference between, say, a B- and a B grade, in a borderline case; so there was some potential real value to the incentive. Due to the incentive, the responses were not anonymous. However, the students were told that the professor would not even read the feedback essays until a few weeks after grades were calculated and submitted, so as to minimize, if not eliminate, any attempt at influencing their grades through ingratiations.

It is important to note that I, as a teacher and researcher for over three decades, am well aware of the various issues associated with anonymous versus known respondents. Whenever possible I opt for known respondents because of my deeply-held conviction that anonymity too often encourages irresponsibility as opposed to protecting respondents against retaliatory potential. Moreover, in an ethics course, if I have not developed a mutually open and honest relationship with students such that they can knowingly express their true beliefs, then I have already failed as a teacher of ethics. If one truly believes in the value of ethical decisions and actions and cultivates the same among students, then there is no need for anonymity. Having said this, I recognize there is always a possibility that the feedback data may be subject to some degree of response bias, in that those individuals who chose to respond may have had a different perspective than those who chose not to respond.

Of 23 undergraduate students enrolled in both sections of the course, 11 provided feedback. And of 8 graduate students in both sections of the course, 6 provided feedback. In the following subsections, a representative sample of this feedback is included—but it should be considered a sample only in the sense that it is a subset of feedback comments that fairly capture the sentiments of those students who chose to provide feedback. From this perspective, the information is more anecdotal than it is a representative sample in an unbiased statistical sense.

**Student Feedback Regarding Question 1**
The first feedback question asked students to describe how their experiences as facilitators of two class sessions contributed to their personal learning, growth, and development. The following quotes provide a reasonable sampling of the student feedback for this question.

- “[I]n terms of growth and development, I do think I learned quite a bit. Obviously I learned some about the topics I was presenting on, but since we got to choose our topics, I already did have a good foundation of knowledge about both. One of the other lessons, I suppose, that wasn’t quite as obvious, was the idea of teamwork among a class.”
- “I learned how to better handle working as a team, which is a concept that I was very hesitant [about] in the past. … My teammates really made me appreciate others’ input, because there were many instances where they made my ideas better.”
- “Preparing for and facilitating the two class sessions I was involved in was actually beneficial to me. Normally, I loathe group projects. I usually feel like the tasks won’t get done or won’t be good enough unless I do them. However, the length of the presentations (75 minutes) and the topics to be covered were so enormous and intimidating that it forced me to rely on my group. … I learned that it is possible for me to let others do some work, and that the results are usually better than if I were to do it myself.”
- “Another aspect, in addition to teamwork, that was beneficial to me was the sharing of ideas. It is important to present creativity to one’s group, but also to inspire/accept creativity from group members.”
- “The experience of preparing for the facilitation sessions allowed me to ensure that I was practicing business ethics in the course of creating the presentations. I had to ensure not to plagiarize, had to communicate with my teammates, and had to consider the options available to create a good presentation.”
- “I learned a lot of time management while preparing the sessions. It was difficult because I did not want to come up short of the time given, yet I did not want to go over. The variable was the audience’s participation.”
- “When the responsibility of teaching other students is required, a larger and more thorough understanding of the topic is also required. As a result, I had to understand both topics that I presented to the class in detail, so that I could share and spread my knowledge with the other students.”
- “I also learned a lot … [about] the material and how to effectively make others understand and retain the material. Making the students actually retain was the most challenging aspect because everyone learns [in] a different way and ethics is something … [about which] most people already have a certain idea. … It’s trying to elaborate [on] and reinforce those ideas that I found challenging but helped me grow as a person and I’m sure will help me in my future years.”
• “I think that the student facilitation presentations are a wonderful idea and really should be incorporated into every class that we have at this level in our academic careers. For the facilitation sessions that I presented on I probably learned 10 times more than I would have if someone else would have presented the information to me. … These facilitation exercises are also great for our own personal growth. … I think a great deal of this has been from having to make presentations in classes. This is really getting us ready for some of the stuff that we are going to face in the future. I also felt that I learned more about myself through doing these presentations.”

Student Feedback Regarding Question 2
The second feedback question addressed how the students’ learning, growth, and development were influenced by their experiences as audience members during those sessions when their facilitation group was not in charge of the class. A representative sampling of students’ responses to this question follows:

• “We had a class with diverse students from three different countries as well as graduate and undergraduate students, so it was great to hear their differing opinions.”
• “Being an audience member of the facilitation sessions contributed to my growth by forcing me to interact with the groups and understanding the issues from the perspective of my generation.”
• “I think it is beneficial to be learning from our peers. … [People] always talk about how we are influenced by our peers and maybe this is a form of good peer influence.”
• “Being an audience member to the rest of the facilitation sessions allowed me to absorb knowledge from the standpoint of a fellow student. … I also felt more open when I needed to ask questions or participate in another way.”
• “I believe the best presentations of all of the sessions were the ones that ‘hit nerves’ in those in the audience. … The more interactive the sessions were, the more everyone learned.”
• “The variety of subject matter broadened my understanding of how ethics is approached in different arenas. It also made me realize that ethics can vary from profession to profession but at the basis of it all is a somewhat level playing field.”
• “Many of the topics and issues brought up were controversial and made me think about where I stand and where I would like to stand on these issues.”
• “There are certain situations where I would think to myself, ‘Why should I care?’ or ‘Why would I want to do that?’ After having heard these different topics and participated in different conversations with the facilitators and other members of the audience, I had a change of heart and mind.”

Student Feedback Regarding Question 3
The third feedback question sought to ascertain how the students’ learning, growth, and development under the student-led facilitation sessions compared their learning, growth, and development under other teaching/learning formats they had experienced. The vast majority of those providing feedback indicated that, in their experiences, the student-led facilitation sessions were preferable to other learning formats — particularly those that were based on TCM. Of course, a DCP-based approach is not a panacea; not everyone responded positively to the student-led facilitation sessions, as is evidenced by two of the class members — one undergraduate student and one graduate student.

Feedback Supportive of the Approach
A sampling of student feedback of a supportive nature, some of it extraordinarily positive, is contained in the following quotes:

• “I would say in 75% of my classes the professor has lectured while the students took notes. I think that this is one of the most ineffective ways of teaching and yet so many professors take this method. … I absolutely hate learning like this. I think that it is boring and that I learn very little from it. … I am very much the type of person that is hands on and needs to actually do something in order to be able to learn about it. [The] … learning methods that we have [used] … in this class definitely helped me to learn more and take away more information than I have in previous classes taught lecture style. I also believe that from these facilitation sessions there is some information that I will remember for a long time to come.”
• “Teaching others is the most effective way I have learned material. While the technique of taking on assignments in groups has always been beneficial to me, I believe teaching the class the material takes the learning process a step further for the presenters.”

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• “Honestly, I felt that doing the two presentations and sitting in the audience for others’ sessions was the most beneficial learning format I ever encountered at Valpo. Most of my classes are straight lecture. These sessions provide so much more. It teaches students how to work in groups, create engaging topics, and submit meaningful comments, among so many other benefits.”

• “My learning and growth through student-led facilitation (especially when I was the facilitator) was more beneficial … because the material presented spoke on my level and in many cases was more interesting than what I have learned in the past. Straight lectures can be somewhat boring and causes my attention to waiver whereas student-led facilitation that includes student participation is more interesting and still maintains an educational purpose. While researching for a class-long presentation I ran across many items that did not even make the presentation but were still interesting.”

• When I do the research and work myself I learn a lot more and feel that I grow more as a person. … [F]or me to truly get a good grasp on something I need to do it myself.”

• “The uniqueness about leading a session of class is that you get the other perspective of learning. We are able to see what it’s like to need to grab the students’ attention and participation. It not only encouraged growth among the presenters, it allowed for growth in people in the class as they weren’t as hesitant to ask questions.”

• “I believe these sessions were very beneficial but could only be effective at the upper levels of courses. I do not believe a freshman or sophomore class could handle such sessions as well because they are much more unsure of themselves and are still formulating and defining their thoughts.”

• “Having lecture after lecture from a professor day in and day out can certainly be boring, but I will recognize the need for it at times. It really depends on the nature of the course. I think it is easy to agree that student-led facilitation sessions for half of a semester would not be a good idea in, say, an accounting class. There, things are much more black and white, and you want an experienced professional to teach you the right way to do things. Since ethics are often more of a grey area, and there aren’t exactly ‘experts’ in ethics, per se, these sessions worked well. Everyone has experiences that can add to the learning of others, so it’s good to put those to use. When appropriate, it can really add to the class, and make it better than any one person alone could.”

• “Thinking about my current classes and the types of teaching/learning formats they used, the student-led facilitation session format is undoubtedly one of the best (and I’m not just saying that, seriously). When this format was first introduced to us, I assumed that it was going to be the same old group project format and results. However, it proved to be much more effective than I had thought. It combined aspects from multiple teaching/learning methods, instead of just focusing on one with no variety. … The student-led facilitation sessions forced the class to be involved, and it allowed the students to focus on topics that were important to us. The topics, schedule, and textbook served as a sort of guide to keep us on track, but everything else was left to the students to determine. Since the presentations often relied on heavy audience discussion/involvement, many debatable topics were brought up, often causing me to think further about certain issues once the class was over. If the topics were really good, I often shared them with my family and asked for their thoughts on the topic too.”

Feedback Critical of the Approach
The two comments that were critical of the student-led facilitation sessions, but not overly so, were the following:

• “On the one hand, I learned a lot about the two topics that my group had covered through the extensive research that was done. For the other five weeks worth of class, I felt like all I really needed to do was show up.”

• “I do prefer straight lecturers — but the facilitation sessions helped me [to] not be so nervous during presentations. Teamwork is tough, but necessary and a reality in many work and personal life situations. Research projects are always beneficial because one tends to learn something new. The bottom line for the student-led facilitation session format is it does help you remember better and walk away with new information that will last longer in our brains than [with a] straight lecturer format.”

With respect to the first comment, students must recognize that they will get more out of the activity when they invest themselves in it, even if they are only audience members. In regard to the second comment, the student acknowledges some useful benefits of the facilitation sessions even though straight lecture by professors is this students’ preferred learning method.
Concluding Observations
The feedback provided by students at the conclusion of the autumn term of the 2009/2010 academic year confirms the value of the DCP-based, student-led facilitation sessions as an integral part of a business ethics course. Though the data should be considered more anecdotal than systematic sampling, the messages contained in that feedback data are consistent, clear, and robust.

Collectively, the students attest to a growing maturity in appreciating, interacting with, and working with others. Other personal learning, growth, and development involves rising to the significant challenge posed by the facilitation session expectations and associated work. Still other learning, growth, and development reflect the students’ practice of ethics in the process of creating and executing the facilitation sessions. Other important personal developmental outcomes involve the students recognizing and shouldering personal responsibility for their own learning and recognizing their responsibilities and obligations to others. Students also developed a keen awareness of how the sessions helped to effectively prepare them for their future lives. Finally, the sessions helped students to gain insights into their own personal being.

Active involvement as audience members also contributes to the students’ personal learning, growth, and development. They come to understand ethical issues from multiple perspectives, and they recognize the potential positive impact of peer influence. They report comfort with their involvement and participation in the process. The students also develop an appreciation for business ethics in different professional arenas. Class members find value in confronting their own ethical values and positions, and they experience meaningful and beneficial changes in their beliefs and attitudes regarding business ethics.

All but 2 of the 17 of the students who provided feedback preferred learning under the DCP-based, student-led facilitation sessions rather than under other methods they had experienced, especially straight lecturing by professors. Active involvement through in-depth researching of their assigned ethical issues and being responsible for teaching others about those ethical issues contributed immensely to students’ learning. The students recognized the valuable role that teaching others can play in personal learning; this observation is consistent with those of professional educators. For example, Hall (1977/1981, p. 208) asserts that “[m]any people learn better by teaching others, not by listening to professors.” In addition, the student-led facilitation sessions enabled students to connect with the material on their own level. The students also endorsed the need to assume personal responsibility for learning. Moreover, the process gave students considerable freedom to construct their learning environments, and the content caused them to think about and engage with ethical issues outside of class. Even the 2 students who were somewhat critical of the student-led facilitation sessions recognized that there was some learning value in them.

Taken together, the student feedback affirms the validity and utility of the principles of the Development Centered Paradigm upon which the student-led facilitation sessions are based. Indeed, by starting out with the learners’ interests, curiosities, and talents, and then allowing them to determine the content that they will master and the methodology for mastering that content, the actual execution of that self-determined process will contribute substantively to their development into more functionally mature individuals. Moreover, the most recent experience with the autumn 2009 students provides a more data-based confirmation of the value of the DCP-based approach that has been used for several years in the Ethics in Business course at Valparaiso University.

The ultimate desired outcome of applying the Development Centered Paradigm is to facilitate the process of human beings developing into functionally mature individuals — and moral development is an essential part of this process. The students’ feedback robustly indicates that the DCP-based, student-led facilitation sessions substantively contributed to their moral development — “to the growth of moral understanding … [and the] progressive ability to understand the difference between right and wrong, to care about the difference between them, and to act on the basis of this understanding” (Parker, 1998, p. 267). Efforts to foster moral development in my students through the use of a DCP-based approach will continue to be an essential aspect of Ethics in Business.

References


Exploring Authenticity in Student Perceptions

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Abstract: During the last three years Saxion Hospitality Business School increased the authenticity of assessments. Assessments were developed as real-life tasks in which a combination of competences is tested. This new approach towards assessment led to changes in the entire curriculum. E.g. integration of course elements in large courses, increasing cooperation between teachers in multidisciplinary teams, and participation of the professional field in education and assessment. Student satisfaction about the innovated curriculum is evaluated through qualitative focus groups and quantitative questionnaires. This study used the quantitative data to explore factors that are correlated to student satisfaction. Principal component analysis shows a latent characteristic that can be labeled perceived level of authenticity. Regression analysis indicates that perceived level of authenticity is a strong predictor of student satisfaction. Surprisingly, analysis of variance shows hardly any significant differences in perceived level of authenticity between categories of background characteristics (gender, previous education, bachelor license).

Introduction
This study is not the typical research study. This study is not about the usual procedure of formulating a research question, developing a theoretical framework, designing a method, gathering and analyzing data, and finally drawing conclusions. What started as a data mining exploration, using secondary data from student evaluations, grew into a search for theory about authentic learning and resulted in guidelines to improve the level of authenticity and its effect on student motivation and student satisfaction about the curriculum.

Authentic learning requires authentic assessment. Therefore, Saxion Hospitality Business School increased the authenticity of assessments. Assessments were developed as real-life tasks in which a combination of competences is tested. This new approach towards assessment called for changes in the entire curriculum. Individual course elements are integrated in large semester courses, teachers increasingly operate in multidisciplinary teams, and the professional field actively participates in both education and assessment by offering real-life problems.

According to Nicaise, Gibney & Crane (2000) authentic learning compared to traditional learning implies changes in tasks, student activities, course materials, and the teacher role. In the newly developed semesters, these changes confronted teachers and students with various communication problems and organizational shortcomings. However, as the tasks and course materials are improved and the teachers grow into their new roles, the dissatisfying effect of organizational problems decreases. So can we sit back now and let authenticity do its deeper learning and motivating work?

Relevance
If a more authentic way of teaching and assessing can improve the quality of education, it is worthwhile to study the concept of authenticity. According to Voss, Gruber & Szmigin (2007) teachers can improve their work by providing work-relevant assignments, and by using challenging real-life examples and cases. However, Gulikers, Bastiaens & Martens (2005) show that learning in an authentic environment does not necessarily result in better performance than in less authentic environments. What is needed to design a successful authentic curriculum?

This study started as a data mining exploration, based on data from semester evaluation questionnaires to gain insight in the effects of curriculum innovation. The focus will be on the concept “authenticity” and its contribution to student satisfaction. If authenticity is a strong predictor of student satisfaction, it would be fruitful to find ways to further increase the authenticity or at least the student perception of authenticity of both instruction and assessment. Knowing that the HBS has a large student population with various backgrounds it is also relevant to find out whether there are differences in the perceived authenticity of the curriculum. This raises the following research questions:

Research questions
To what extent does perceived authenticity in the HBS curriculum affect student satisfaction?
To what extent is perceived authenticity in the HBS curriculum related to background characteristics of students, such as gender, previous education or bachelor license?
Background information: the new curriculum

The Hospitality Business School (HBS) is one of the academies of Saxion University. Saxion University offers Higher Education. The bachelor programme of HBS consists of three licenses: Facility Management, Higher Hotel Education and Higher Tourism and Leisure Education. Most of the bachelor students are in the age category 17-23 years. The curriculum of a bachelor license is spread over a period of four years.

The old HBS curriculum contained several elements where students were confronted with authentic learning. During practical periods in an organization or in the graduation assignment, students performed tasks for real-life organizations. The role of the student was either in the organization (e.g. employee) or outside the organization (e.g. consultant). Also, in the module “Events” students were assigned with the task to organize a real-life event. However, the largest part of the curriculum was less authentic. Most of the curriculum was developed based on text books, theory and traditional tests.

In 2007 a project was initiated in order to improve the quality of assessment within HBS. Soon after the start it became clear that new development of assessments would require a new curriculum. Teachers grouped in teams were assigned to develop semesters. Their assignment contained information about the set of competences that had to be assessed, the total number of ECTS (30), and about some side-constraints such as the requirement to reserve at least 21 ECTS for individual assessment. It was decided to develop the new curriculum backwards phased, so the third and fourth year of the curriculum were the first to be designed.

This study focuses on five newly developed semesters: 1) Integral facility management, 2) Hotel management, 3) Destination development and management, 4) Hospitality in international events, 5) Innovation in hospitality business. Each of the semesters 1-3 is part of one of the three licenses. When it comes to semester 4 and 5 a student can choose one of the two. As a consequence, students in semester 4 and 5 work in multidisciplinary teams. In the semesters 1-3 the same set of competences is assessed. However, the design of the semesters 1-3 hardly shows any resemblance since the context of the assessment task and the license specific content strongly differs. The same goes for semester 4 and 5.

In the assignment to develop the new semesters, developers needed to ensure that the assessment tasks were formulated as real-life tasks. As a consequence all semesters use one or more real-life organizations that provide the assessment task. During the semesters students have access to organization resources through guest lectures, company visits, documents and interview rounds. However, the majority of the student activities takes place within school.

Evaluation outcomes: first results

During the first years the quality of the new semesters was closely monitored and deeply evaluated. Both qualitative focus groups and quantitative online questionnaires were used to gain insight in the satisfaction of students in these semesters. The quantitative questionnaire was developed without a theoretical framework. The data was gathered using Parantion web application. All students that participated in the new semesters were invited through their school email account to fill the online questionnaire. By clicking a link in the email, the online questionnaire started. The overall response rate was 50% (n=280). Besides traditional questions about course satisfaction (e.g. quality of teachers, quality of information) students were asked to indicate both the importance of and their satisfaction about two items that are related to authenticity of instruction and assessment. The items were phrased as statements and the students could choose from the answers 1) strongly disagree, 2) disagree, 3) neutral, 4) agree, 5) strongly agree.

Looking at the differences between importance and satisfaction, the level of authenticity ought to be increased. Students on average agree with the importance but respond neutral when it comes to satisfaction (table 1).

<table>
<thead>
<tr>
<th></th>
<th>Mean importance (1 SD – 5 SA)</th>
<th>Mean satisfaction (1 SD – 5 SA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content of the semester is based on professional practice</td>
<td>4.16</td>
<td>3.33</td>
</tr>
<tr>
<td>Tests of the semester are characterized as real-life professional tasks</td>
<td>3.82</td>
<td>3.14</td>
</tr>
</tbody>
</table>
In the questionnaire students were also asked to typify the semester by using the labels “realistic”, “challenging”, “difficult”, “fascinating”, “well organized”, “vague”, “fun” and “time consuming”. The question was “compared to my previous semester, this semester is …” and again the answers were 1) strongly disagree, 2) disagree, 3) neutral, 4) agree, 5) strongly agree.

Due to the increased level of integration between competences, the increased multidisciplinarity between teachers, the higher level of application and the larger complexity of the assessments, teachers experienced a quite new way of working which confronted them with unexpected pitfalls. As a consequence, students typified the semesters with a very low mean score on “well organized”. In the focus groups we learned a lot about student frustrations when it comes to the high scores on “time consuming”, “vague” and “difficult”.

After the univariate analysis based on the mean values, multiple regression analysis was used to determine the strongest predictor of the overall semester satisfaction. The overall semester satisfaction was measured by a mark from 1-10. Comparing the standardized beta coefficients we can conclude that the perceived organizational quality is the best predictor, followed by “challenging” and “fun”. The frustration items (“time consuming”, “vague” and “difficult”) that drew attention in the univariate analysis proved to be weak predictors of student satisfaction, probably because most of this is closely related to the item “well organized”. Based on the regression findings, teachers were advised to improve semester organization and to try to find ways for making the semesters more challenging and fun.

### Table 2: Mean values and standardized beta coefficients for semester labels

<table>
<thead>
<tr>
<th></th>
<th>Mean (1 SD – 5 SA)</th>
<th>Regression: standardized beta’s (dependent: overall satisfaction) (total variance explained: 65%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well organized</td>
<td>2.33</td>
<td>0.282*</td>
</tr>
<tr>
<td>Challenging</td>
<td>3.24</td>
<td>0.277*</td>
</tr>
<tr>
<td>Fun</td>
<td>2.84</td>
<td>0.275*</td>
</tr>
<tr>
<td>Fascinating</td>
<td>3.02</td>
<td>0.154*</td>
</tr>
<tr>
<td>Difficult</td>
<td>3.63</td>
<td>-0.107*</td>
</tr>
<tr>
<td>Time consuming</td>
<td>4.07</td>
<td>-0.104*</td>
</tr>
<tr>
<td>Realistic</td>
<td>3.39</td>
<td>0.099*</td>
</tr>
<tr>
<td>Vague</td>
<td>3.91</td>
<td>-0.086*</td>
</tr>
</tbody>
</table>

*significant at 0.05 level

**Evaluation outcomes: exploring authenticity**

Based on the data from the quantitative evaluation exploratory analysis was conducted to find out what dimensions can be identified as latent characteristics behind the eight labels. Principal component analysis was used. KMO-value and Bartlett’s test indicated sufficient correlation between the items to conduct component analysis. Two components with an Eigen value above 1 were found. Correlation between these two components was very low, so the orthogonal rotation technique varimax was used to interpret the components. This study focuses on the first component.

The first component consisted of 4 items: “realistic”, “challenging”, “fun”, and “fascinating”. Reliability analysis confirmed that these items have a lot in common since Cronbach’s alpha was 0.805. Now the question rose how to interpret this latent characteristic. What do these items have in common? The first label that was suggested was “enthusiasm”. This might cover the items “challenging”, “fun” and “fascinating” since these items create enthusiasm. However, it does not cover the item “realistic”. Therefore the label “passion for the field” was suggested. If a semester is “realistic”, “challenging”, “fascinating”, and “fun” it appeals to the student’s passion for the field. However, this label is not correct since it is a student characteristic, whereas the items are characteristics of the semester. Therefore the label “authentic” was chosen. A semester that gains a high score on the combination of these four items must be an authentic semester. Authentic for the field in which the student would like to start a professional career.
A first univariate analysis shows that the mean value for this authenticity is 3.18 (on a scale from 1 strongly disagree to 5 strongly agree). This would confirm the finding from table 1 that students do not perceive the semesters to be authentic. In table 3 the standardized beta’s show that authenticity is the strongest predictor.

Table 3: Standardized beta coefficients for semester labels – with authenticity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (1 SD – 5 SA)</th>
<th>Regression: standardized beta’s (dependent: overall satisfaction) (total variance explained: 64%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authenticity</td>
<td>3.18</td>
<td>0.656*</td>
</tr>
<tr>
<td>Well organized</td>
<td>2.33</td>
<td>0.280*</td>
</tr>
<tr>
<td>Difficult</td>
<td>3.63</td>
<td>-0.111*</td>
</tr>
<tr>
<td>Vague</td>
<td>3.91</td>
<td>-0.096*</td>
</tr>
<tr>
<td>Time consuming</td>
<td>4.07</td>
<td>-0.096*</td>
</tr>
</tbody>
</table>

*significant at 0.05 level

Theoretical framework: authenticity

Now that the concept authenticity is introduced, theory is explored for further conceptualization. Baartman, Bastiaens, Kirschner & van der Vleuten (2006, p.158) define authenticity as a requirement for an assessment program. In their definition authenticity is related to “... the degree of resemblance of a Competence Assessment Program (CAP) to the future professional life.” So if an assessment task is phrased the same way a professional in the field would receive it, the authenticity of the assessment task can be considered to be high. According to Gulikers (2006, p.44), who defines assessment authenticity “by its resemblance to the professional practice situation”, the assessment task refers to one of five dimensions that can be distinguished when it comes to the authenticity of an assessment. These five dimensions are: the assessment task, the physical context, the social context, the assessment result or form, and the assessment criteria. Below these five dimensions will be conceptualized further, based on the work of Gulikers (2006).

**Task.** Gulikers (2006, p.82) defines the task as “The assessment assignment that defines the content of the assessment”. When it comes to the authenticity of the task elements such as complexity and required competence need to resemble the real situation. It is also important that the tasks appeals to the ownership of the student.

**Physical context.** This relates to “where” the student has to perform the task. One the one hand a high authenticity on this dimension lowers the safety of the learning environment. Within school the context is known to the student and it can be controlled by the teacher. And the consequences of making a mistake are quite different. On the other hand, one might expect an increase in student motivation if the task has to be performed in the “real” situation.

**Social context.** If task performance in the professional field takes place in teams, an authentic assessment requires students to work in teams. However, since student teams are by far more homogenous than professional teams when it comes to age, education, and interests, one might argue that high authenticity on this dimension is difficult to organize.

**Form.** This refers to the type of assessment. If the output result of the assessment is similar to a product a professional in the field would be expected to deliver, the level of authenticity is high. Low authenticity would be generated by typical school products that have no resemblance to what someone in professional practice would produce.

**Criteria.** If the quality of the student’s work is graded based on the same criteria a professional would be judged on in practice, the level of authenticity is high. Since professionals normally are aware of the criteria they are valued on, it is important that students also have information beforehand about these criteria.

Of course, authenticity is not limited to the assessment. Gulikers (2006, p.12) addresses both instruction and assessment when she states “authentic instruction and assessment reflect a correspondence between what is learned and assessed and what students are expected to do in the workplace”. This means an evaluation of the level of authenticity should pay attention to the entire semester and not just the assessment. The more even simple class
situations would resemble a student’s future work situation, the better. In order to develop authentic instructional tasks, Iverson, Lewis & Talbot (2008) present a framework containing 5 criteria.

**Importance of authentic learning**

Why is authentic learning important? Gulikers (2006) summarizes various authors when she relates authentic learning to learning theories about situated learning or cognitive apprenticeship. According to these theories, meaningful, authentic learning requires learning in meaningful contexts. This way of learning would not only imply better learning, it would also stimulate a fluent transition from school career to work career.

Gulikers, Kester, Kirschner & Bastiaens (2008, p.173) discuss various authors who argue that authentic assessment a) stimulates deeper learning, b) stimulates students to act and think like professionals, and c) increases student motivation “… by showing the immediate relevance of that what is learnt for professional practice”.

**Perceived level of authenticity**

Using the five dimensions of authentic assessment, authentic assessment can be designed. However, this requires someone to determine “an authentic task” or “the authentic criteria”. Gulikers (2006) shows that authenticity is subjective. Practitioners would be expected to be the best sources to determine authenticity. However, even if the practitioners are the ones to determine dimensions like task and criteria, teachers and students might perceive the assessment not to be authentic. And if the purpose of authentic assessment is to increase student motivation, it might be smart to take the student perception of authentic as leading.

In order to focus on the student perception of authenticity, differences between groups of students have to be taken into account. As students gain more experience in professional practice, their perception of professional practice changes. Using student perception of authenticity as a design principle for the five dimensions of authentic assessment, requires information about the level of experience in the student group. So first year students should not only be treated differently because of the lower level of complexity they can handle in an assessment, but also because they may have a quite different idea of what an authentic assessment would look like.

Of course, this does not only count for assessment. If assessment is the guideline for the design for all instruction activities in the curriculum, as in the 4 Component Instructional Design (4CID) by Van Merrienboer, the instruction activities would also require authenticity. E.g. if a 4CID learning task is meant to prepare students for the assessment, the designers of the learning task would have to take the student perception of authenticity into account to develop a motivating task. On the other hand, authentic learning tasks might be a means to communicate the authentic situation as it is perceived by teachers and/or practitioners and thereby a means to alter student perception.

**Combining data and theoretical framework**

With this theoretical framework, the first adaption is about the label “authenticity”. When combining the outcomes of the principal component analysis and the theoretical framework, this label ought to be changed into “perceived level of authenticity”, since it is all about the student perception. The first evaluation results showed that students did not perceive their semesters to be very authentic. Simple reasoning would lead to the advise to improve the level of authenticity. Using the theoretical framework this advise can be improved.

First of all, it would be recommendable to find out to what extent this is a matter of perception. By inviting all stakeholders (practitioners, teachers, and students) to analyze the authenticity of the semester it can be determined whether these perceptions differ. Also, research among students could be done to find out what they perceive to be authentic. Based on these outcomes it can be decided whether the authenticity has to be improved, whether the communication about the authenticity has to be improved or whether the authenticity has to be adapted to the student perception.

Second, if perceptions of stakeholders are analyzed, it is important use the five dimensions of authentic assessment as they were dealt with in the theoretical framework. The items that are available in the student evaluations give some information but are poor when it comes to detail. In order to be able to provide recommendations for improvement of assessment design, it is necessary to distinguish between task, physical context, social context, form and criteria.

Third, looking at the effect of experience on perception it is useful to conduct bivariate analysis in order to find out whether there are differences between groups of students. E.g. in every HBS semester there are students with different backgrounds when it comes to their previous education. Some have had experience in professional practice whereas others arrive without any relevant practical experience. If these students have different perceptions of authenticity, their perception of the semester will differ and as a consequence differences may occur in motivation and performance. Although this analysis would preferably be based on the five dimensions of authentic assessment, in table 4 the results of the evaluation analysis will be shown.
When it comes to previous education we might expect differences between MBO and HAVO/VWO since the first group gained practical experience in their previous education whereas the second group did not. However, analysis of variance (ANOVA) shows that none of the differences in table 4 are significant at the 0.05 level. So from this analysis there seems to be no reason to take different perceptions into account in the design of semester assessments.

Table 4: Differences in perceived level of authenticity

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean Perceived level of authenticity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Male</td>
<td>60</td>
<td>3.15</td>
</tr>
<tr>
<td>- Female</td>
<td>220</td>
<td>3.18</td>
</tr>
<tr>
<td><strong>Previous education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- MBO</td>
<td>80</td>
<td>3.04</td>
</tr>
<tr>
<td>- HAVO</td>
<td>156</td>
<td>3.18</td>
</tr>
<tr>
<td>- VWO</td>
<td>36</td>
<td>3.42</td>
</tr>
<tr>
<td>- Other</td>
<td>8</td>
<td>3.31</td>
</tr>
<tr>
<td><strong>Bachelor license</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Facility management</td>
<td>94</td>
<td>3.06</td>
</tr>
<tr>
<td>- Higher hotel education</td>
<td>93</td>
<td>3.22</td>
</tr>
<tr>
<td>- Higher Tourism &amp; Leisure education</td>
<td>93</td>
<td>3.26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>280</td>
<td>3.18</td>
</tr>
</tbody>
</table>

Conclusion and discussion
Research based innovation of curricula assists in better understanding the mechanics of student’s perception of semesters in authentic learning situations. And since student satisfaction is positively related to educational achievement, increasing satisfaction really matters (El Ansari & Oskrochi, 2005). This research showed that student perception of authenticity affects the overall satisfaction of a semester. However, since the secondary data lacked any theoretical framework it is recommended to repeat this study, using Guliker’s five dimensions of authentic assessment.

This study also showed that student perception of authenticity of the new semesters was low (just above 3 on a scale from 1-5). Recommendations in order to improve the authenticity can be detailed 1) by applying the five dimensions in the improvement design, and 2) by researching the perceptions of the relevant stakeholders (practitioners, teachers, and students) regarding the assessment authenticity.

Finally the secondary data were used to show that no significant differences in perceived authenticity exist between different categories of gender, previous education and bachelor license. Simple recommendation might be that future improvements do not need to distinguish between these groups. However, looking at the quality of the evaluation data for this purpose, this conclusion might be simplistic. Future research using the five dimensions of authentic assessment will deliver more detailed results, and this detail may be necessary to find significant differences between groups.

References


A comparison of the implementation of “problem based learning” and “real case projects” at two institutes as an example of practically orientated teaching methods

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Abstract: The FHWien University of Applied Sciences of WKW in Vienna, Austria, offers eight different bachelor and master degree programs in the field of management and communication. For a university of applied sciences it is essential to have a practical and theoretical orientation in its approach to teaching.

The methods ‘PBL - problem based learning’ (a focus at the Institute for Tourism Management) and “real case project” (a focus at the Institute for Communication Management) will be presented as two options for enhancing practically oriented and group work based didactics. These two teaching methods, which aim at linking together “theory and practice” in the sense of establishing a practically oriented education on an academic level, are compared.

To meet this objective a qualitative approach will be taken and group interviews will be conducted among the bachelor students of the Institute for Tourism Management and the Institute for Communication Management. The focus of the interviews is to find out how students assess the two teaching methods. The focus will be on the perceived benefit and drawbacks for their studies with the aim of deriving success factors and suggestions for improvement.

The group interviews will be conducted in spring 2010 and results will be presented at the 17th EDiNEB Conference in June 2010 in London.

Didactics: real case project and problem based learning
If higher education wants to move from a more scholastic view on teaching to a more constructivist approach to learning, student centered and participant directed learning is one of the key issues to be addressed (Kolmos, Du, Holgaard, & Jensen, 2008). At the FHWien University of Applied Sciences of WKW in Vienna, Austria, the Institutes for Tourism Management and the Institute for Communication Management strive to face today’s learning requirements with “real case projects” and “problem based learning”, among other methods.

The “real case project” method unites elements of case based learning, project based learning and problem based learning (Markowitsch, Messerer, & Prokopp, 2004). Students work in groups to find solutions to authentic, real world problems currently faced by a company or organization that turns to the educational institution for support. The students are not taught but coached and have to come up with solutions within their work groups, thus requiring a high level of self-directedness.

PBL is a turning away from learning by subjects and the reproduction of content. The first and essential characteristic of PBL is described by Boud: “The principal idea behind problem-based learning is that the starting point for learning should be a problem, a query or a puzzle that the learner wishes to solve” (Boud, as cited in Rideout, 2001). A second essential characteristic is the student-centered nature of the approach, with its emphasis on self-directed learning. Third, the small group face-to-face nature of the process encourages learners to develop the skills and abilities to work together in groups (Rideout, 2001).

The “real case project” method at the Institute for Communication Management
The course in which this method is conceived is the most important course in the third semester of the bachelor degree program. It is based on an organization or company currently facing a challenging situation in the area of communication management. The students are briefed face-to-face by a company representative and ideally have the opportunity to ask questions during the following “rebriefing” session. The students work in groups of about 5-6 students and are expected to do most of the work outside of class.

During the process, which extends over the entire semester, there are several sessions during which the students are coached by two internal, full-time lecturers and one external, part-time lecturer. Students can present and discuss the status of their work and receive feedback from the lecturers/coaches but do not receive any formal input.
If possible, the company representative/client is present during one of these sessions (mid-term presentation) to give feedback regarding the students’ rough ideas.

As this course aims at increasing the students’ analytical, problem solving and social competencies, the course is closely coordinated with other courses, namely “social skills: teamwork and creativity” and “communication concepts”. During the final presentation the company representative/client (sometimes accompanied by colleagues) as well as all the lecturers involved in the courses “real case project”, “communication concepts” and “social skills” are present. Feedback by the company representative/client is given directly after the final presentation. Feedback by the lecturers is given in a separate session during which students also briefly reflect the entire project. Feedback is given regarding the final presentation and the final paper.

The PBL method at the Institute for Tourism-Management
PBL courses are held in the second, the third and the fifth semester of the bachelor degree program. Students get an introduction to problem based learning at the very beginning (in the second semester, before they start the first time with PBL). Earlier it was only a presentation by a tutor of the institute. This has been extended by an introduction movie about PBL (published in May, 2008).

One PBL block consists of seven two-hour classes. Classes are held weekly. Students receive the case study on the e-learning-platform “Moodle”. The case studies used in PBL are created in cooperation with commercial enterprises and are based on actual decision situations. Most of the case studies are highly topical. Students should read the case study individually and compile a personal “micro-article” (with fixed questions about the case). At the end of the course, the solutions are presented and the students receive feedback from the company representatives. The feedback from the company is a key success factor for the overall success of PBL.

There are several roles in a PBL process that the PBL coach has to explain at the beginning: The chairperson, the note-taker and the observer. Finally the students need to write a resolution paper. The evaluation of these written results is done by external experts. The resolution paper must come up to the common scientific criteria. In the last PBL session the students get a feedback from the coach, related to their team work as well as a private feedback on their personal assessment and social competencies. Prior to their feedback they need to prepare a reflection paper.

The overall grade is made up of three parts: The grade of the coach, the appraisal of the company and the mark of the external expert.

Research design: group interviews
Two group interviews were conducted among bachelor students of the Institute for Tourism Management and the Institute for Communication Management. The focus of the interviews was to find out how students assess the two teaching methods (real case project and PBL).

A focus group interview is a semi-structured discussion of a given topic by a homogeneous group of 6-10 individuals. The term “semi-structured” suggests that the discussion is not as rigidly controlled as an interview using a standardized questionnaire, but neither is it an unstructured conversation (Aubel, 1994).

The discussions were led by Christina Leitner (Institute for Communication Management) and Nadine Fauland (Institute for Tourism Management) respectively who used a question guide with open-ended questions. One discussion group consisted of bachelor students of Communication Management regarding “real case projects”, the other group consisted of bachelor students of Tourism Management regarding “problem based learning”. Each group interview took about one hour.

The two group interviews were recorded and notes were taken. Afterwards they were analyzed with a focus on the perceived benefits and drawbacks of the two methods with the aim of deriving success factors and suggestions for improvement.

In the next chapter the key findings are presented.
Findings
Before the group interviews, Christina Leitner and Nadine Fauland had identified 11 elements, along which the two methods were then compared:

<table>
<thead>
<tr>
<th>PBL</th>
<th>real case project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction/opening session</td>
<td>Introduction/opening session</td>
</tr>
<tr>
<td>Distribution of important information: e-learning tool “Moodle”</td>
<td>Distribution of important information: Briefing and rebriefing</td>
</tr>
<tr>
<td>Individual work and group work</td>
<td>Group work</td>
</tr>
<tr>
<td>One coach</td>
<td>Two internal lecturers and one external lecturer</td>
</tr>
<tr>
<td>-</td>
<td>Mid-term presentations</td>
</tr>
<tr>
<td>Final presentation</td>
<td>Final presentation</td>
</tr>
<tr>
<td>Resolution paper</td>
<td>Final paper</td>
</tr>
<tr>
<td>Feedback from the company representative/client</td>
<td>Feedback from the company representative/client</td>
</tr>
<tr>
<td>Feedback from the external expert</td>
<td>Feedback from the external and the internal lecturers</td>
</tr>
<tr>
<td>Feedback from the coach</td>
<td>Feedback from the external and the internal lecturers</td>
</tr>
<tr>
<td>Grading: three parts (from the coach, an external expert and the company representative)</td>
<td>Grading: two parts (internal lecturers and company representative)</td>
</tr>
</tbody>
</table>

Problem based learning
To begin with, the interviewees were asked general questions about problem-based learning. All respondents spoke positively about the PBL method. The students made positive comments about being able to take personal responsibility for and determining their own learning. In addition, students reported that they did not only learn about the relevant case itself, but they were also able to improve their social skills.

The case studies were considered to be beneficial due to their practical relevance. The topicality of the case and the involvement of a “real” company were specifically noted as very positive.

The PBL question/problem is often unclear at the start. But the students remarked that this it was exciting because they were able to work out the problem together in the group.

It was reported that the case studies often did not come up to the previous knowledge of the students and were too challenging. The interviews revealed that another drawback for the whole team process was a group size of more than ten or less than seven team members.

Introduction (opening session)
Respondents were hardly able to remember the opening session. Some stated that they had not been well briefed during the introduction and that the opening session had been unnecessary; it was only through learning by doing (after the first run with PBL) that they could understand problem based learning. The introduction movie of PBL was considered as helpful. The majority, however, agreed that the learning process became better after a few runs with PBL.

Moodle e-learning platform
The students indicated that the micro article, the case study and the protocols were to be found on Moodle. However, nothing was said about the usefulness of Moodle. The interviewees explained that the adoption of Moodle had increased and that the use of this e-learning tool had enhanced from the first to the last PBL unit.

**Individual and group work**

Learning through individual work was reported as being given in any case. This went far beyond pure theoretical knowledge. “We had to know for example something about negotiation techniques. No one told us anything about that in advance. So we had to read books and teach ourselves; but that was great!”

Through individual work the students indicated that they had been forced to deal with topics for which they otherwise would not have taken the time.

An enrichment of social competencies was also stated. The students were unanimous regarding the benefit and positive learning of group work: They were able to improve their social competencies, find out their strengths and weaknesses, learn how to improve their self- and time-management, and each group member could be employed according to their strengths in the group meetings.

**Coach**

In general, the students noted that all coaches were different. Some had guided the group strongly, others not at all and had remained in the background. The respondents saw the coach in the role of an observer who should neither intervene in substance nor stop discussions and who should only interfere when the group absolutely does not know what to do or if the group is not on the right path. Regarding the last aspect, however, some students argued that the coach should allow the students to digress.

The students reported that they wanted the coach to support and promote their personal development and give a detailed introduction to the duties of the different roles.

**Final presentations**

Some final presentations had been experienced positively, and others negatively by the students. “Some of the company representatives were absolutely enthusiastic but others were totally offended by our solutions.” How the final presentations were experienced by the students depended greatly on the operation of the company representative and his/her feedback.

It was considered that it would be best if there were a maximum of three presentations. More than three are - according to the students - too many and make it hard to listen and to stay concentrated.

A presentation at the company’s offices would increase the importance of the PBL course.

**Resolution paper**

The grades awarded for the resolution paper were not as good as the grade for the presentation or the mark of the coach. That means that the worst part of the grade was mostly given for the resolution paper. Many of the respondents did not consider it right that the resolution paper was assessed according to academic standards.

The final presentation had priority for the students and they also gave more weight to the feedback of the company representative than to that of the expert who assessed the resolution paper.

However, the majority were of the opinion that both presentation and resolution paper were necessary. The resolution paper is important because otherwise they would not deal with the theory and would only work on the surface.

The respondents noted that they were not aware of the evaluation criteria and the necessary content of the resolution paper.

**Feedback from the company representative**

Feedback only on the presentation was considered to be insufficient. The students would like to have detailed feedback on the content, which is not limited to the presentation but also refers to the resolution paper. This feedback should be neutral, objective and fair.

**Feedback from the external expert**

The respondents indicated that it was not clear for them according to which criteria the paper had been graded. The feedback often contained negative statements because the academic standard was not met.

**Feedback from the coach**

The feedback of the coach was reported to have high priority for the majority of the interviewees. According to the students it varied as to whether they received individual feedback from their coach; this differed from coach to coach. It was felt that it would be good if all the coaches gave individual feedback. However, this should be a private meeting between the coach and the student.

The group feedback was perceived positively by the students.

If the coach were able to do so, the students would wish to be coached on how to give feedback correctly.

**Grading**
According to the respondents it is good that the overall grade is made up of three parts. In their opinion, the company should not only grade the presentation, but also the resolution paper. The majority of the interviewees found the evaluation of the resolution paper to be incomprehensible and intransparent.

By contrast, the grade of the coach was perceived as being easy to understand.

**Recommendations for action**

It is necessary that the case studies used in PBL correspond to the students’ prior knowledge. The authors need to be specifically informed about what the students have already been taught and what the required learning outcome of the case study should be. A possible tool for this could be a gap analysis. A gap analysis is the reveal of a desired state of performance and a comparison with the current state of performance (Franklin, 2006). A curriculum mapping of what has been taught so far and about the learning outcome could be one possible suggestion.

Another recommendation, derived from the general questions, concerns the size of the group: Seven team members are the minimum, eleven should be the maximum. This can ensure efficient work in the group.

To introduce the students appropriately to PBL a visual preparation of the PBL process can be useful. The introductory movie should further be used for the opening session. Furthermore it is important that all roles (within the PBL process) are explained well to the students. The rest should simply be learning by doing.

The PBL coach has an important role within the PBL context. Before a PBL coach starts with the first unit, he or she should do some preparatory training. In this way it can be guaranteed that all PBL courses are uniform. After the opening session, two units should serve for “giving feedback” and “moderation techniques”; this should be a lecture given by the coach or if the coach does not have the ability to do so, an expert can take it on. Furthermore the coach should receive instructions on how to give feedback properly and the coach should be able to pass this knowledge on to his/her students. Feedback can be a valuable way of initiating personal change and, providing it is done well, can be very motivational (Jones & Gorell, 2009). Individual (private) feedback to each student after the PBL course, which has to be done by the coach, is vitally important.

A “KODE-Kompetenztest” (a competence profile) should be considered to facilitate the students’ personality development (with focus on their competencies). Consequently they can be coached individually to positively develop those skills.

The final presentation is of high importance for the students. Not more than three presentations should be given successively. If – occasionally - presentations can be done at the office of the company, this should be taken into account.

As the evaluation criteria are not clear to the students, the evaluation form should be published on Moodle before the students start to work on the resolution paper. The academic standards of this paper should be retained.

Before the company representative gives his/her feedback to the group, he/she should be briefed about the high importance of this feedback. Additionally, the company representative should give written feedback on the content of the resolution paper.

**Real case project**

**General reaction / overall perception**

The spontaneous first reaction was a positive one, emphasizing the importance of being able to apply what had been previously learned, to a specific case. The possibility to combine the knowledge and competencies acquired in different courses to one task/project was positively mentioned. Overall the practical application to the project of theoretical input from other previous courses is considered to be a positive aspect of this type of course.

**Introduction (opening session)**

Having one unit (45 minutes) at the beginning to clarify the general requirements and organisational details of the course, enables the students to then focus on the content during the next session, the briefing session.

**Briefing and rebriefing**

The importance of the rebriefing session was considered to depend on the quality of the briefing. If the briefing is complete and comprehensive, the rebriefing has mainly the function of ensuring that the students have correctly understood the task and are on the right track. If, however, the briefing is rather incomplete, the rebriefing is considered even more important than the briefing. If the rebriefing is done in writing only, it leaves room for misinterpretation, which is why the students clearly prefer a face-to-face rebriefing with the company representative. However, being obliged to prepare questions in writing for the face-to-face rebriefing beforehand, increases the quality of the rebriefing session according to the students.

**Group work**
Regarding the group work and the group process the students emphasized the benefit they see in running the “real case project” and the “social skills” course in parallel. They consider the opportunity to form the groups on a voluntary basis and to have social skills lecturers accompany this selection process and the following teambuilding phase, as crucial. Although they are also aware of the importance of teambuilding in other courses, where group work is required, they admit that a conscious teambuilding effort is often omitted if this phase is expected to take place outside of a regular course. They thus were able to form groups based on each team member’s strengths, weaknesses, interests and preferences. They assessed their group work as very efficient and saw one reason for this in the fact that they were given time and room for teambuilding exercises during the social skills course.

**Internal and external lecturers/coaching**

The lecturers are seen as coaches, who do not convey theoretical input but who make sure the students stay on the right track and encourage students to think outside of the box. On the one hand it is frustrating for the students not to get any specific answers in the sense of “this is right and this is wrong”. On the other hand they considered this beneficial for the intensity and depth of their group discussions as it was up to them to decide what to do with the feedback. The term “coach” or “coaching” is considered very appropriate. It puts less emphasis on the grade per se and more emphasis on the project. The fact that both internal, full-time lecturers and part-time lecturers from the business field are involved, enriches the discussion through the different perspectives offered. Again, this ambiguity of feedback can on the other hand also lead to a certain temporary feeling of frustration among the students.

**Mid-term presentations**

Mid-term presentations are considered useful if the company representative attends. Two presentations are considered helpful only if there is sufficient time in-between the second mid-term presentation and the final presentation for making major adjustments. A point of discussion was the lack of directives regarding what the students should present. While some students appreciated this option to present whatever seemed appropriate for the group, other students would appreciate more guidance as to what is expected of them (e.g. the strategy, rough ideas, specific measures, etc.)

**Final presentation**

The comments regarding the final presentation were mainly on a logistical level (making sure a bigger lecture hall than normally is reserved, making sure that students can access the lecture hall well in advance to prepare their presentations, etc.).

**Final paper**

The precise list of requirements is appreciated, however, not all elements seem to achieve their intended purpose. The task of listing which aspects of which previous courses were useful for the project, is not taken very seriously and is a task that is typically done last minute by only one team member. The requirement of listing the key learnings is currently dealt with in a similar way. The intention of starting a reflection process as a group regarding what they learned so far and how the project contributed to their learning process is not met.

**Feedback from the company representative/client**

It was striking that the most important aspect for the students was to get appreciation from the company representative/client, appreciation for the amount of time and effort they invested into the project. This appreciation comes across either by giving constructive and specific feedback to the students or by giving the students the feeling that the company is seriously considering implementing the students’ ideas or by the number of people from the client’s company attending the final presentation. In this context students also mentioned how important it is for them not to be considered by the client merely as students but rather as an agency.

**Feedback from the internal and external lecturers**

The feedback from internal (full-time) and external (part-time) lecturers becomes especially important if the company representative/client does not give detailed feedback or only negative feedback. Students would appreciate if more distinction were made between whether a client was satisfied with the outcome on the one hand and the actual work (e.g. final paper) itself on the other. While being faced with a multitude of rather vague feedback from the lecturers during the project is considered frustrating but beneficial, at the end of the project the students would expect and appreciate more specific feedback in terms or what they did well and where improvement is needed and why.

**Grading**

As mentioned before, in this specific course (real case project) the actual grade is of less importance to the students than the feeling of having achieved something as a group by delivering a good and comprehensive communication campaign and having a satisfied client in the end. In the context of grading the students also mentioned the option of giving each other 360° feedback as they had done in another course. Such a measure, would, however, need to be accompanied by a lecturer in order to avoid hard feelings.

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Recommendations for action
Sufficient time needs to be invested beforehand in making sure that the company representative/client really has a relevant issue that he/she wants to be solved by the students. It should also be made clear to him/her that the scope of the course and the amount of time and effort invested by the students will extend far beyond that of a regular course. This on the one hand will raise expectations but should also increase the commitment to the project in his/her role as the client.

The students should prepare their questions for the rebriefing in writing beforehand and should then be given the opportunity to discuss them with the client face-to-face.

The formation of the teams and the teambuilding process should continue to take place in and be supported by the course “social skills”, offered in parallel throughout the entire project.

The diversity of perspectives and feedback giving by the different internal and external lecturers should be kept. However, one can consider stating clearer beforehand that this ambiguity is intentional and that the lecturers are aware of the fact that this ambiguity will most likely lead to temporary frustration among the students.

The timing and the structure of the mid-term presentations should be reconsidered, possibly reducing the number while increasing the duration and possibly giving clearer information regarding what is expected of the students.

Regarding the final paper, the task of listing which aspects of which previous courses were useful for the project, should be reconsidered. Also, the key learnings should be dealt with in a different way in order to start a reflection process among the students as a group. An option could be to have the students hand in these assignments only after the presentation, possibly in preparation of the common feedback session.

Regarding feedback, special care should be taken to emphasize the importance of constructive feedback, both from the lecturers and the company representative. Giving constructive feedback could also be practiced by the students by giving each other 360° feedback. Such a measure would, however, clearly need to be accompanied by a lecturer.

Comparison of the two teaching methods
Based on the students’ perception and assessment the following commonalities were identified regarding both teaching methods:

- The general response to both methods was positive.
- The group process and the development of social skills is considered to be a central element.
- The company representative/client plays a central role. Receiving constructive feedback from him/her is very important to the students. Solving a problem for an enthusiastic company representative/client is highly motivating for the students. Being able to give the final presentation on the company premises is considered as an “upgrade” of the course.
- The lecturers are considered as coaches and their role as coaches is appreciated.
- The final presentation is currently perceived as having more importance than the final paper. In this respect, the students would appreciate more detailed feedback also regarding the final paper.
- Giving and receiving constructive feedback among the students is a challenging task for them.
- The students understand that with this method there are no “right” or “wrong” solutions but only more or less suitable approaches to solving the problem at hand. They see the focus rather on the process of finding a solution than on the solution itself.

Despite the multitude of commonalities a key difference between the two methods needs to be clearly stated. In problem based learning the problem is intentionally ill-structured and therefore in-depth briefing and rebriefing sessions with the company representative/client are avoided. In the real case project, on the contrary, as much information exchange as possible in the early stage is essential for the success of the project. Despite this difference in the outset, both methods are apt to successfully foster group-based and practically-oriented learning.

References


The Use of Personal Development Plans (PDPs) in organizations and the role of its perceived goal

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Abstract. In today’s fast changing knowledge economy organizations are forced to give priority to strategic human resource development to gain and maintain a competitive advantage (Guthridge, Komm, & Lawson, 2008). For this reason, tools such as Personal Development Plans (PDPs) are increasingly implemented to manage the employee’s lifelong learning. It is an assessment tool that is used for various purposes, ranging from evaluative purposes to learning and development purposes (Smith & Tillema, 2001). Although, as the term itself indicates, the power of a PDP lies in stimulating professional development of employees, it can be questioned if implementing PDPs with evaluative purposes does not jeopardize its developmental power. In this study we focus on the influence of the perceived nature of the PDP’s goal on its practice and in turn on the employee’s performance. It was found that the nature of the perceived goal influences the PDP practice and the employee’s performance. In contrast, perceiving the PDP as a tool that aims at certification or selection was not related to a better performance.

Introduction

In today’s fast changing knowledge economy, organizations are forced to give priority to strategic human resource development to gain and maintain a competitive advantage (Guthridge, Komm, & Lawson, 2008). For this reason assessment tools, like Personal Development Plans (PDPs), are increasingly implemented to manage employees’ lifelong learning. PDPs are used for various purposes in practice, ranging from a more evaluative purpose; accountability, selection or certification on the one hand; to learning and development on the other hand (Smith & Tillema, 2001). Although, as the term itself indicates, the power of a PDP lies in stimulating professional development of employees it can be questioned if implementing PDPs with evaluative purposes does not jeopardize its developmental power. However, research on the different effects of perceiving different purposes of PDPs, has not been conducted before. In this study we therefore focus on the influence of the nature of the PDP’s perceived goal on its use and practice and in turn on the employee’s performance.

First, we will define what a personal development plan (PDP) is. Second, we will elaborate on the various goals PDPs are used for and, here in line with, on the different types of PDPs. Third, we focus on the supporting conditions that are necessary to make the use of a PDP effective. Finally, we will introduce the goal of this exploratory study in more detail.

Theoretical Background

What is a Personal Development Plan (PDP)?

Personal Development Plans (PDPs) stem from portfolios which originally have been used by artists, architects and brokers as an instrument to present different pieces of work (Lyons & Evans, 1997). During the past decade, the use of portfolios in educational settings has increased and consequently various studies focus on the use of portfolios to support learning in order to achieve certification in education (Taylor, Thomas & Sage, 1999; Austin et al., 2005). Lately, portfolio assessment or Personal Development Plans, how the tools are mostly called within organizations, have been acclaimed to be effective tools in supporting employees’ continuous learning, improve individual performance and thus positively influence organizational performance. In this respect, the validity of portfolio use in organizational settings has received increasing attention in the literature (e.g., Tillema & Smith, 2007). Yet, empirical research on the goals and the use of portfolio assessment in organizations is scarce (Austin, Marini, & Desroches, 2005; Evans, Ali, Singleton, Nolan, & Bahrami, 2002; Zeichner & Wray, 2001). Although literature uses different terms to describe the assessment tool (e.g. logbook, portfolio or personal professional profile) and although often the same term is used for different applications, the different applications have certain characteristics in common. A PDP, the term we will use in this paper, is an assessment tool that (Brown,
- gives an overview of the competencies the employee worked on in the past (retrospective) and which competencies the employee is planning to work on in the future and how (prospective);
- should be composed by the employee himself, mostly in consultation with the supervisor;
- can be used as a basis/structure for performance interviews with the supervisor that provides the employee with feedback and stimulates the employee’s reflection; and
- serves as a decision-making tool, from planning an individual training-program to assessing the suitability of a promotion.

In other words, since the tool is used for taking various decisions, the tool is used for different goals. In the next paragraph we will discuss the different goals a PDP can be used for.

**Striving for various goals**

Commonly a distinction has been made between two purposes (Smith & Tillema, 2001): certification/selection/accountability on the one hand and learning/development on the other hand, placed on a continuum. The former includes a summative assessment where the outcome needs to support certain decisions regarding the learner, whereas the latter’s purpose aims at learning and development of the learner, supported by formative assessment.

Next, Beausaert et al. (2010) formulated, based on a literature review on the goals, effects and supporting conditions of PDPs, nine cluster of goals for which a PDP can be used for:

- Professional or personal development; reflective learning; providing evidence; documenting; certification, selection and promotion; external mobility; coaching; stimulating confidence; and organizing. The goals professional development, reflective learning, coaching, stimulating confidence and organizing can be categorized as developmental goals, while the goals providing evidence, certification, selection and promotion, documenting, and external mobility, can be seen as certification, selection and/or accountability goals.

According to the different goals a PDP is used for, different types of PDPs are distinguished. Tillema (2001) discusses the dossier-type portfolio, the course-related learning portfolio and the reflective learning portfolio. First, the dossier-type portfolio serves a certification/selection purpose. Similar, the terms ‘show’ portfolio (Bunker & Leggett, 2004) as well as ‘product’ or ‘showcase’ portfolio (Moore & Bond, 2002) are used in the literature. Second, the course-related learning portfolio serves a developmental purpose. It is used in order to enable assessment as well as further development during a learning program (Windsor et al., 1999). Third, the reflective learning portfolio is used in order to document and illustrate the process of learning and growth (Smith & Tillema, 1998). Other terms used in literature to refer to this type of portfolio, are: the working portfolio (Bunker & Leggett, 2004) or process portfolio (Moore & Bond, 2002). Research indicated that the nature of the perceived goal of portfolio assessment, either evaluative or developmental, influences the assessment and outcome (Smith & Tillema, 2001). Formative portfolios that focus on learning are acclaimed to be most effective for development (Tillema, 2001). Next, the reflective portfolio is most appreciated for its insights in development, progress in learning and performance (Tillema, 1998/2001).

**Supporting conditions**

Using a PDP does not guarantee it will result in employees working on their development. Moreover, it should be seen as an instrument that structures the undertaking of learning activities and guides the reflective conversations with the supervisor. In order to make the PDP effective in guiding and supporting the employee’s development, several supporting process conditions are expected to be present (Gibbs & Simpson, 2004; Smith & Tillema, 1998).

A distinction needs to be made between supporting process conditions related to the context and supporting process conditions related to individual characteristics of the user of the PDP (Beausaert et al., 2010).

**1.3.1. Supporting conditions related to the individual**

Supporting conditions of PDP practice that are related to the individual comprise the quantity and quality of distributed effort as well as the reaction of the learner to received feedback and the individual's perception regarding the usefulness of the PDP for learning.

**Quantity of Learner Effort.** Sufficient effort of the learner comprises that sufficient time is captured and that the effort is distributed evenly across topic and time. Furthermore, the learner needs to feel that they have to do so in order to do well in the assessment (Gibbs et al., 2003). Sufficient effort supports productive learning activities, which involve learners in deep learning. There is empirical evidence for a direct relationship between the quantity of learner effort and learning and developing (Berliner, 1984; Gibbs et al., 2003, Gibbs & Simpson, 2004).
Quality of Learner Effort. High quality of learner effort demands engagement in productive learning activities as well as communicating clear and challenging goals that are understandable for the learner (Gibbs et al., 2003). A clear formulation of goals has a positive influence on the quality of learner effort since learners who understand the goal can orient their behavior towards these aims (Bunker & Leggett, 2004). Other advantages of formulating the tool’s goals in advance are: smooth processing, enlarged engagement and less confusion. Besides, according to studies done by Chickering & Gamson (1991) high expectations focusing on learning positively reinforce learning. Furthermore, there is empirical evidence for a direct relationship between the quality of learner effort to learn and the learner’s development in educational settings (Berliner, 1984; Gibbs et al., 2003, Gibbs & Simpson, 2004).

Reaction to the received feedback. Previous research on self-directed learning of adults found receiving valid feedback and informative support to be essential ingredients for effective learning (Peterson, 1995). Nevertheless, receiving feedback is not sufficient. PDPs only contribute to development if the learner is willing to accept this feedback (Tillema, 1998). The literature coins the term “feedback orientation”, which describes the overall receptivity to feedback and the extent to which individuals welcome guidance and coaching (London & Smither, 2002). In particular, liking and valuing feedback, seeking it, being able to process other’s view of oneself mindfully and feeling accountable to react to feedback characterizes a positive feedback orientation (London & Smither, 2002). It comprises that the learner receives and attends to feedback as well as that actions are executed that improve learning. This ‘feedback effect’ is essential for effective PDP assessment (Gibbs et al., 2003, Gibbs & Simpson, 2004).

Perceived value of PDP construction. By using a PDP employees can make an active contribution to their own knowledge construction, which is beneficial to learning outcomes (Sluijsmans, 2002). Gibbs et al. (2003) state that the assessment itself, the construction of the PDP influences the effectiveness. Using and thinking about the PDP engage the learner in productive learning activity and thus have a positive influence on the quality of learning. Furthermore, the construction itself is seen as a deep learning experience in contrast to surface learning experience (memorization) (Gibbs et al., 2003). Accordingly, employees should perceive the act of constructing the PDP and discussing the tool as deep learning experiences.

1.3.2. Supporting conditions related to the assessment context
Supporting conditions related to the assessment context include the quantity and quality of the feedback, delivered on the PDP.

Quantity of Feedback. Feedback needs to be given frequently as well as quickly enough in a sufficiently detailed form. If feedback is given irregularly, too late or in a very broad way, the learner can not use it properly. Therefore it is necessary that feedback is delivered or received immediately, that meetings about the PDP happen regularly and go into depth (Chickering & Gamson, 1991). Also Wade and Yarbrough (1996) found that the quantity of feedback information may influence the acceptance and use of feedback for further learning.

Quality of Feedback. Gibbs et al. (2003) have mentioned ‘feedback quality’ as a necessary condition for effective assessment. Accordingly, high feedback quality implies a focus on learning. Furthermore, it needs to be understandable for each individual learner as well as linked to the purpose of PDP assessment. This includes for example, that the feedback is realistic as well as specific. Research by Black & William proves a relation between feedback quality and effective learning (1998).

Research question
This study will research if the employee’s perception of the nature of the PDP goal predicts PDP practice and how it consequently influences his or her performance. We focus on the perception of the employees that work with a PDP since research has shown that not the actual situation but the individual’s perception influences the learning approach and outcome (Biggs, 2003; Ramsden, 1998; Prosser & Trigwell, 1999). PDP practice is formed by measuring the six important supporting conditions for effective PDP use. It is hypothesized that a perceived developmental goal will predict the practice of the tool and consequently the employee’s performance significantly positive. Next, it is expected that the relation between the perceived goal and the employee’s performance is partially mediated by the PDP use and practice.

Previous research suggests that the nature of the perceived goal influences the PDP practice and use (Smith & Tillema, 2001). Next, Biggs (2003) stresses the important influence of the individual’s perception of the assessment on his or her learning outcomes.
Methodology

Participants and Procedure
Questionnaires were taken from 64 employees who are working with PDP and employed in two different organizations in the Netherlands. Seventeen questionnaires were collected from teachers, office workers and managers at a Dutch institution for higher education. The employees were working with a PDP on a voluntary basis for approximately one year when the questionnaire was taken. The development plan serves as basis for performance interviews with the manager, two times a year. During the performance interviews the employee’s performance is assessed, future objectives are determined and his or her development is monitored (organization 1). Next, 47 questionnaires were gathered from office workers at a Dutch city council. The participating department implemented PDPs one year ago as part of the assessment cycle. The assessment cycle is similar to the assessment cycle of organization 1. Twice a year the employee and team leader meet for a performance interview. At the beginning of the year the goals are set and at the end of the year an evaluation meeting is organized. In between, the development plan is discussed during more informal meetings (Organization 2). Since both organizations apply similar assessment cycles, we combined both datasets.

Instruments

The Perceived Goal Questionnaire. To measure the goals an organization aspires by implementing PDPs, according to the employee, the “Perceived Goal Questionnaire” was used (Beausaert, et al., 2010). It rates various goals on a 5-point-Likert scale concerning the strength of its pursuit going from “never” to “always”. The 13 items were divided into two categories of goals, which are based on the distinction made by Smith & Tillema (2001). The first category comprises goals that are related to certification and selection, as for example “preparing job interviews” or “accreditation/reaching standards”. The second category includes learning and development goals, as for example “stimulating (self-)reflection” or “provide evidence for development”. To assess the validity of the two distinct categories of evaluative and developmental goals, we performed a Principal Components Analysis (PCA) on the items of the two scales. The screeplot indicated the existence of two factors. The subsequent PCA with oblimin rotation resulted in two factors with item loads of .42 and more. The first component had an eigenvalue of 5.74 (corresponding to 44 % of the explained variance) and the second component had an eigenvalue of 1.40 (explaining 11 % of the explained variance). All items that are categorized as learning goals according to Smith & Tillema’s theory (2001) loaded on the first factor, the learning goals scale, while almost all items which belonged to the evaluative goals component, loaded on the second factor, the evaluative goals scale (see Table 1). One item (‘selection/getting internal promotion’) showed a significant cross-load and was deleted. Cronbach’s alpha was .87 for the evaluative goals scale and .68 for the learning goals scale.

Table 1: Principal component analysis for the perceived goal questionnaire.

<table>
<thead>
<tr>
<th>Perceived goal</th>
<th>Component 1</th>
<th>Component 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning of future learning activities</td>
<td>.90</td>
<td></td>
</tr>
<tr>
<td>motivate</td>
<td>.86</td>
<td></td>
</tr>
<tr>
<td>Learning / stimulate reflection</td>
<td>.82</td>
<td></td>
</tr>
<tr>
<td>Personal / professional development</td>
<td>.75</td>
<td></td>
</tr>
<tr>
<td>Mean to receive coaching</td>
<td>.71</td>
<td></td>
</tr>
<tr>
<td>(self-) assessment</td>
<td>.57</td>
<td></td>
</tr>
<tr>
<td>Selection / promotion</td>
<td>.46</td>
<td>.44</td>
</tr>
<tr>
<td>Stimulate organizational development</td>
<td>.45</td>
<td></td>
</tr>
<tr>
<td>Mean to collaborate with colleagues</td>
<td>.42</td>
<td></td>
</tr>
<tr>
<td>External selection interview</td>
<td></td>
<td>.77</td>
</tr>
<tr>
<td>Certificate / license</td>
<td></td>
<td>.77</td>
</tr>
<tr>
<td>Accredit / achieve standards</td>
<td></td>
<td>.63</td>
</tr>
<tr>
<td>Delivering evidence</td>
<td></td>
<td>.62</td>
</tr>
</tbody>
</table>

Assessment Experience Questionnaire (AEQ). The PDP practice, as perceived by the employee, is measured with an adapted version of the “Assessment Experience Questionnaire” (AEQ) (Gibbs et al. 2003). It is based on 11 conditions for assessment to enhance learning (Gibbs et al., 2003; Gibbs & Simpson, 2004). Within 36 items that
focus on feedback conditions the following six components are measured on a 5-point-Likert scale ranging from “totally disagree” to “totally agree”: The quantity of employee effort (e.g. “With the PDP it is possible to do quite well without studying too much”), the quality of employee effort (learning) (e.g. “Making the PDP brought things together for me”), quantity of feedback (e.g. “The feedback comes back very quickly”), quality of feedback (e.g. “The feedback helps me to do things better”), the effect of the feedback (e.g. “I tend to only read the marks”) and the construction of the PDP (“While working on my PDP I learned new things”). The questions of the AEQ were adapted from an educational to an organizational setting. Thus, for example, “I have to work on my PDP on a regularly basis to get good grades for this course” became “I have to work on my PDP on a regularly basis to get good evaluations”. The six components received Cronbach’s alphas that were respectively .69, .62, .58, .81, .70 and .89.

Performance. The perceived improvement of performance is measured by using an adapted version of the “Output of Transfer Behavior Scale” (Xiao, 1996). It contains 6-items, scored on a 5-point-Likert scale ranging from “Totally disagree” to “totally agree”. For example, Xiao’s “Using the new KSA has helped me improve my work” was translated into “Using a PDP has helped me to improve my work”. The cronbach’s alpha was .93.

We refer to Table 2 for a detailed overview of the variables, instruments, number of items and Cronbach’s alphas for the variables involved in this study.

Table 2: Variables, instruments, Number of items and Cronbach’s alpha for the different variables in this study

<table>
<thead>
<tr>
<th>Construct</th>
<th>Variable</th>
<th>Instrument</th>
<th>Items</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perception of Portfolio</td>
<td>Nature of the perceived goal</td>
<td>Perceived Goals Questionnaire</td>
<td>5</td>
<td>.68</td>
</tr>
<tr>
<td></td>
<td>Certification &amp; Selection</td>
<td>(Beausaert, Segers, van der Rijt, &amp; Gijselaers, 2010)</td>
<td>8</td>
<td>.87</td>
</tr>
<tr>
<td></td>
<td>Learning &amp; Development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Practice</td>
<td>Quantity of Effort</td>
<td>Adapted Assessment</td>
<td>6</td>
<td>.70</td>
</tr>
<tr>
<td></td>
<td>Quality of Effort</td>
<td>Experience Questionnaire (AEQ)</td>
<td>6</td>
<td>.50</td>
</tr>
<tr>
<td></td>
<td>Quantity of Feedback</td>
<td>(Gibbs et al., 2003)</td>
<td>6</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>Quality of Feedback</td>
<td></td>
<td>6</td>
<td>.70</td>
</tr>
<tr>
<td></td>
<td>Effect of Feedback</td>
<td></td>
<td>6</td>
<td>.70</td>
</tr>
<tr>
<td></td>
<td>Construction of Portfolio</td>
<td></td>
<td>6</td>
<td>.56</td>
</tr>
<tr>
<td>Perceived Performance</td>
<td>Adapted Output of Transfer</td>
<td>Behavio Behavior Scale (Xiao, 1996)</td>
<td>6</td>
<td>.93</td>
</tr>
</tbody>
</table>
## Results

### Preliminary Results

Table 3: Means, standard deviations and correlations

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Developmental goal</td>
<td>3.04</td>
<td>.74</td>
<td>.57**</td>
<td>.49**</td>
<td>.57**</td>
<td>.27*</td>
<td>.43**</td>
<td>.37**</td>
<td>.60**</td>
<td>.53**</td>
<td></td>
</tr>
<tr>
<td>2. Evaluative goal</td>
<td>2.05</td>
<td>.78</td>
<td>1</td>
<td>.46**</td>
<td>.41**</td>
<td>-.11</td>
<td>-.07</td>
<td>-.04</td>
<td>.33**</td>
<td>.24</td>
<td></td>
</tr>
<tr>
<td>3. Quantity of employee effort</td>
<td>2.72</td>
<td>.60</td>
<td>1</td>
<td>.74**</td>
<td>-.12</td>
<td>.26*</td>
<td>.22</td>
<td>.56**</td>
<td>.44**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Quality of employee effort</td>
<td>2.85</td>
<td>.66</td>
<td>1</td>
<td>.11</td>
<td>.50**</td>
<td>.40**</td>
<td>.59**</td>
<td>.51**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Quantity of the feedback</td>
<td>3.24</td>
<td>.54</td>
<td>1</td>
<td>.49**</td>
<td>.36**</td>
<td>13</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Quality of the feedback</td>
<td>3.43</td>
<td>.65</td>
<td>1</td>
<td>.60**</td>
<td>.43**</td>
<td>.46**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Reaction to the feedback</td>
<td>3.53</td>
<td>.55</td>
<td>1</td>
<td>.35**</td>
<td>.33**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Construction of the PDP</td>
<td>2.84</td>
<td>.69</td>
<td>1</td>
<td>.68**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Performance</td>
<td>2.93</td>
<td>.63</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The coefficients are Pearson’s correlation coefficients. * p < .05. ** p < .01.

Table 3 shows the descriptives (means and standard deviations) and correlations between the two subscales of the perceived goal questionnaire, the six PDP practice subscales and the perception of performance. The Pearson correlation coefficients indicate that a perceived developmental nature of the goal correlates significant and positive with all components of the PDP practice; a perceived evaluative nature of the goal only correlates significant and positive with employee effort (quantity and quality) and the PDP’s construction. Furthermore, the Pearson correlation coefficients indicate that a perceived developmental goal correlates significant and positive with a high-quality performance, while an evaluative goal is not related to a high-quality performance. Finally, the Pearson correlation coefficients indicate that five out of six components of the PDP practice correlate significant and positive with performance: quantity and quality of employee effort, quality of received feedback, the reaction to feedback as well as the perceived construction of the PDP.
Regression Analysis

Table 4: Multiple regression analysis of the nature of the perceived goal scales on performance

<table>
<thead>
<tr>
<th></th>
<th>Performance</th>
<th>B</th>
<th>ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td>-.01</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>-0.40*</td>
<td></td>
</tr>
<tr>
<td>Level of education</td>
<td></td>
<td>-.21</td>
<td></td>
</tr>
<tr>
<td>Experience</td>
<td></td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td>Team membership</td>
<td></td>
<td>-.14</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>.16</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>-0.20</td>
<td></td>
</tr>
<tr>
<td>Level of education</td>
<td></td>
<td>-.12</td>
<td></td>
</tr>
<tr>
<td>Experiences</td>
<td></td>
<td>.18</td>
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<td><strong>Total</strong></td>
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<td>.19**</td>
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</tbody>
</table>

Note: The reported regression coefficients are standardized coefficients. * p < .05. ** p < .01.

First, to determine the relative contribution of the nature of the perceived goal in predicting perceived performance a simultaneous multiple regression analysis was executed. We controlled for the background variables: gender, age, level of education, experience and team membership. In line with our hypothesis, the standardized beta coefficients indicate that only when the tool is perceived as a learning tool, it predicts performance positively (β = .55; p < .001) (see Table 4).
Table 5: Simple linear regression analysis of the nature of the perceived goal scales on the PDP practice components

<table>
<thead>
<tr>
<th>Step 1</th>
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Step 2

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<td>.49*</td>
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<tr>
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<td>-</td>
<td>.53*</td>
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<td>.30*</td>
<td>.17*</td>
<td>.31*</td>
<td></td>
<td></td>
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</tbody>
</table>

* p < .05. ** p < .01.

Note: The reported regression coefficients are standardized coefficients.

Second, to determine the relative contribution of the nature of the perceived goal in predicting PDP practice a simple linear regression analysis was executed (see Table 5). We included again the background variables gender, age, level of education, experience and team membership as control variables. It was found that a perceived learning goal positively predicts all six components of the PDP practice: quantity of employee effort (β = .34; p < .05), quality of employee effort (β = .45; p < .01), quantity of received feedback (β = .47; p < .01), quality of received feedback (β = .65; p < .01), the reaction to the received feedback (β = .49; p < .01) and the construction of the PDP (β = .64; p < .01). In contrast, a perceived evaluative goal negatively predicts the perceived quantity of received feedback (β = -.42; p < .05), the perceived quality of received feedback (β = -.53; p < .01), and the perceived reaction to the feedback (β = -.38; p < .01).
Table 6: Multiple regression analysis of the PDP practice components on performance

| Step 1          | Gender | Age  | Education | Experience | Team | Performance
|-----------------|--------|------|-----------|------------|------|---------------
|                 | -.01   | -.40*| -.21      | .22        | -.14 |               |
| ΔR²             |        |      | .16       |            |      |               |

Third, to determine the relative contribution of the perceived PDP practice on the perceived performance, a multiple regression analysis was performed including the same control variables as before (Table 6). One component of the PDP practice, PDP construction, significantly positive predicts a high-quality performance.

Mediation Analysis

Elaborating further on the regression analysis, a mediation analysis is executed in order to find out if constructing the PDP, one of the six components of the PDP practice, mediates the relation between the employee’s perception of the goal the PDP is used for and his or her performance (see Table 7 and Figure 1). The regression analysis indicates that the relation between the learning goal scale and performance is not significantly mediated by the construction component.

Table 7: Mediation analysis of PDP construction as a mediator between developmental nature of the perceived goal and performance

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Mediator</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 4</th>
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</thead>
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<td>Performance</td>
<td>Constructing the PDP</td>
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<td>.64**</td>
<td>.64***</td>
<td>.14</td>
</tr>
</tbody>
</table>

Note: The reported regression coefficients are standardized coefficients. * p < .05, ** p < .01, *** p < .001.

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Figure 1: Mediation Effect of PDP construction on the relation between developmental nature of the perceived goal and performance

Discussion
The aim of this study was to research the effects of the employee’s perception of the nature of the goal a PDP is used for on how the employee uses the tool and how it consequently influences his or her performance. The results indicated that the perceived goal predicts the PDP practice and employee performance, resulting from working with a PDP. In particular, perceiving the tool as a way of aiming for learning and development had a positive effect on the employee effort’s quantity and quality, on the perceived value of constructing the PDP, on the perceived quantity and quality of received feedback as well as feedback-related employee reactions. Accordingly, a positive relation to performance was found. In contrast, perceiving an evaluative goal negatively predicts the perceived quantity and quality of received feedback as well as feedback related employee reactions. Perceiving an evaluative goal does not predict performance, however.

Furthermore, it was researched if the PDP practice and use is a mediator of the relationship between the perceived assessment goal and the employee’s performance. However, no significant mediation was found. In other words, the hypothesis that a perceived developmental goal would predict the employee’s performance positively, via the use of a PDP - in contrast to perceiving a selection or certification goal – was not confirmed.

Limitations and future research
This study implies several limitations which could be faced by future research.

First, it is not clear to which degree the results of the study can be generalized. After all, the data are based on the perception of the employees and we might expect some socially desirable answers by which the results could be distorted. For future research it might therefore be of interest to question the perception of several informants, such as supervisors, peers and team leaders.

Second, this research was conducted in two organizations with a rather small sample size and a low response rate in one of the participating organizations. Since this is an exploratory study, the amount of participants is not a problem, but the extent to which the results can be generalized to other organizations is questionable. It is also possible that the employees who did not participate in the study caused selective dropout. For example, it is possible that the employees who would score low on performance did not fill in the questionnaire. Next, this research focused on one educational organization and one municipality in the Netherlands. The extent to which the results can be generalized to other organizational or national settings and levels is not studied. Consequently, further research in different organizational settings, as for example in different professional sectors or differently sized organizations, might produce different research results.

Third, since this study has a cross-sectional design changes over time cannot be determined. Therefore, we cannot draw conclusions about the direction of the effects. We found relations, but it is not possible to draw conclusions regarding their causality. Longitudinal research is required, which might shed light into the causality and direction of the effects that were found in this research.

A fourth limitation is that this study is limited by a low internal reliability for some scales of the PDP practice. The Cronbach’s alpha for the quality of employee effort is .62, and for feedback quantity .58. This indicates that the concepts might not represent what they stand for. The low reliabilities may be explained by the fact that the questionnaire has been translated from English to Dutch and from an educational to an organizational context. This might influence the validity of the data.

Practical Implications
This study has a few implications for human resource development in organizations. First, this study supports previous research findings that employees perform better because of the PDP if the tool is introduced and used as a learning and development tool and not as an instrument for certification or selection. In other words, personal development plans should only be used to support the employee’s learning and development and should not be linked to appraisal. Second, especially the act of constructing the PDP stimulates the employee’s reflection and consequently his or her performance. Therefore it is important that the supervisor pays sufficient attention to the construction of the PDP and guides and helps the employee in that process by delivering high-quality instructions and feedback and by being supportive. Supervisors should be trained in guiding and supporting the employees in using a PDP.

References


OpenScout: Competence based management education with community-improved open educational resources

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Abstract: This contribution introduces the European funded OpenScout project. A basic infrastructure to find and reuse open educational resources (OER) in the field of business and management education is introduced. Based on a discussion of competence based education in the domain of business and management education some selected competence models are summarized. An example of a future user and evaluation group of the OpenScout platform is provided with the PLATO network. Two alternative methods to enrich learning resources with competence related information are discussed, namely purpose tagging and problem collections.

Introduction

There is an ever-growing need for management education and related content in all education segments and application fields. A large amount of open educational resources (OER) on management topics is already available in learning object repositories. However, even though there are obvious potentials, so far open content is significantly underused in the business sector, and particularly in SMEs where the need for lifelong learning is even greater. In studies on learning by managers, conducted in 2004 by the European Foundation for Management Development (EFMD), it has been identified that more than 85% of managers in SMEs would learn more using online reference material and learning resources, if the content is quickly found, accessed, available and meets exactly the identified competence development needs (Habermann, Schmidt, & Kuechler, 2004). However, there is still a variety of barriers regarding the re-use of OER (Pawlowski & Zimmermann, 2007), such as:

- Lack of awareness and competencies on OER re-use
- Insecurities about legal aspects and quality
- Lack of interoperable, easy-to-use repositories

The OpenScout project (http://www.openscout.net) aims at creating novel approaches to use and re-contextualization of OER by enabling stakeholders to use simple but powerful tools in their community. Its main aim is to stimulate the use and reuse of open educational resources in the field of business and management education in Europe. This paper introduces the aims, methodologies and first results of the project.

Basic infrastructure for Open Educational Resources

The OpenScout web portal provides a basic infrastructure for finding, annotating and evaluating open educational resources in the field of business and management education. The infrastructure integrates existing as well as novel services and tools to avoid redundant developments and to combine successful approaches. The architecture combines the following components:

- Basic services for search, retrieval, metadata handling
- Extended services for multi-national search, localization as well as competence-based services
- Tool library integrating successful tools for (re-)authoring, publishing, indexing
- Integration mechanisms to existing repositories as well as social networks
- Collaboration space enabling cross-border re-use and community-based improvement of OER

As a first step, the project has connected existing OER repositories in the domain Business and Management Education with the purpose to offer the content in a unified community portal. Content providers from different
countries (UK, Finland, France, The Netherlands, Germany, Austria, Finland, Belgium and North Africa) contribute their business and management education learning resources to the project. To make these resources better accessible and visible a federated search approach is implemented that allows learners to find and identify resources in an easy to use and accessible interface. Federated search allows searching at the same time in several distributed repositories within the same search field.

In this approach all metadata of the learning objects from the original repositories are stored in the OpenScout environment. Federated search is a search solution that has been identified to work well in heterogeneous networks of learning object repositories with the advantage of low response times and low dependencies on the original repository infrastructure (Ternier et al. 2009). Most of the repositories involved offer an OAI-PMH interface to enable harvesting of the metadata describing the repository’s learning objects (OAI PMH). The metadata of the learning objects is represented using the OpenScout application profile which relies on the LOMv1.0 standard (IEEE LTSC, 2002). This federated search functionality is the core service of the OpenScout web portal (see fig. 1).

![Federated search](image)

Figure 1. Federated search

In addition, the portal is currently extended and several added-value services are under development. One example of additional functionalities are extended search mechanisms like faceted search which allows to filter search results according to the properties of the retrieved learning objects, e.g. content type, competences, language, and repository. The search results are presented together with basic information derived from the LOM description of each learning object. After selecting a learning object, the user is presented with a new container that holds document specific information according to general metadata (date, author, type etc.), social metadata (ratings, reviews, tags), as well as user competences and skills, see Fig. 2. Registered users can add their own ratings, tags and reviews. Competence models that serve as the foundation for competence related metadata can initially only be changed by authorized persons, such as content providers, domain experts or stakeholder representatives.
The user is also presented with recommended tools for working with this resource. These recommendations consist of default tools for visualization, authoring, and collaboration. Visualization tools allow the user to interpret, annotate and translate resources. Authoring tools offer the ability to re-author, re-purpose and re-package educational resources. Finally, the collaboration tools allow users to work collaboratively on educational material, such as videoconferencing tools. In addition, several connectors will enable to use the search results within external learning management system and to use the content for e.g. in the composition and authoring of courses. One of the core foci of the project is the support and enabling of competence based education with open educational resources in the domain of business and management education. This part and its related (search) services are introduced in the next part of the paper.

### Competence Based Business and Management Education

Evidently, in a continuously changing society it has become impossible to manage and conduct business without sustained personal development. For example, managers of bigger organizations face the globalization of business, rapid technological change, continual reorganizing and competence-based competitions. Indeed, such developments challenge the skills, competencies and capabilities of managers in organizations. Although SME’s managers might not be confronted with the same extent to such changes, they have similar challenges in keeping their personal development up to date. In the light of such changes, it is of paramount importance that managers’ competencies also need to be renewed on a regular basis. In practice, the responsibility for management development is often left to managers themselves. It therefore depends on their own perceptions and motivation as to which areas they intentionally seek to develop or whether they participate in various development processes (Viitala, 2005).

The expressed intent for developing frameworks of competence is usually to help individuals and/or organisations improve their performance (Boyatzis, 1982; Goleman, Boyatzis, & McKee, 2002; Hay Group, 2003; Conger and Ready, 2004). By making explicit the competences/skills that are required, or the outcomes that should be achieved, frameworks of competences have the opportunity to provide valuable support for all who are involved in recruitment, training, appraisal, promotion and self-development. Such frameworks can also facilitate greater flexibility in working practices and support systems of more equitable pay and renumeration. The most common use of such frameworks by organisations is for performance management/appraisal, followed by recruitment, followed by training and development (Rankin, 2008). Finally, such competence frameworks lie at the basis of technological frameworks like OpenScout proliferating and provisioning life long learning services for stakeholders in the domain of business and management education. Such technological frameworks require some system based reasoning based on competence frameworks. These frameworks might, besides from competences, also incorporate or refer to cases, problems, and content. Competence frameworks for management education can guide the development of educational offerings and can make these offering better accessible. Such frameworks are developed by various stakeholders in the domain and need regular maintenance to keep them up to date. Various techniques are informing their development, such as domain analysis, job analysis, occupation analysis, observations at work or in simulations...
or analysing critical incidents during business development (e.g., Man, Lau, & Chan, 2008). Furthermore managers are often questioned to induce and elicit their beliefs about competencies and effective role performance.

In spite of the variances in priorities and emphasis on different competences in different management contexts, it can be assumed that some degree of generalizability exists. Indeed, it is argued that many of the competences managers need are transferable and generic in nature, which subsequently for the basis for all organized management development (Mumford et al., 2000).

Educational offerings in management education should not be restricted to tangible (electronic) artefacts (whether or not produced in social networks), but should be extended with opportunities to get in (virtual) touch with representatives of aforementioned social networks. Indeed, skills and knowledge of the SME’s managers/owners are largely acquired through their social relationship within and outside their organizations, which is extended beyond the SME and towards a broader spectrum including suppliers, customers, bank managers, previous companies, university education, professional membership, parents, and mentors (Deakins and Free1, 1998; Down, 1999; Sullivan, 2000).

Albanese (1989) concludes from extended research amongst different stakeholders (experts, teachers, trainers, students) in the domain of management and CBME (Competency Based Management Education) in the US that:
- It is possible to identify a set of competencies and it is desirable to do so
- Managers and potential managers can be trained to acquire and perfect managerial competencies (although there is some concern where the training should occur (on job sites or in classroom), who should do it (industry trainers or college professors), who should receive it (employees, undergraduates or graduate students) and which competencies are most likely to benefit from training.
- Competent managers make a difference in the level of organisational performance.

This research by Albanese also clarified that no one advocates eliminating cognitive learning, but there was and is a call for more balance between cognitive learning and skill training. CBME allows for the measurement of identifiable competencies. This offers a way a college, university, training institute can demonstrate its accountability. But more than that, it is a reflection of faculty and student receptiveness to the idea that it is not enough to know about management but it is also important to devote time to learning how to manage.

Albanese (1989) mentions several sets of managerial competencies that are currently discussed. The developers of these competency sets (i.e., competence frameworks) do not claim their competencies are the “final word” on the skills needed for managerial effectiveness. They contend that no single set of competencies can fully capture the mystery of the managerial role. And, of course, there are many job-specific skills that influence effectiveness in particular managerial jobs. To get an overview of the discussion about competences and competence based education in the field of business and management education we have conducted a literature review that took into account several publications in the last 10 years that could be identified via a literature search in Google Scholar, Ebscohost and other databases. Although different, such frameworks could be used as a starting point for developing an univocal framework for management education throughout Europe or for identification of mechanisms (i.e., mappings) that could be exploited when interpreting and exchanging educational offerings between various frameworks for management education throughout Europe. Indeed, this is a huge challenge, but at the same time there is an urgent need for system based-reasoning and optimizing labour mobility in the domain of management. Nonetheless, the starting point for implementing a first version of the competence based search will take one of the models presented here as a basis and adapt it to the needs of the stakeholders of the project which are business schools and SMEs:

- Whetten and Cameron (1984) place their approach to Competency Based Management Education (CBME) in the context of three pedagogical traditions that dominate management education: principles of management (i.e, focus on knowledge acquisition, little to no skills training), behavioural science (assumes that rigorous thinking about behavioural issues and experience in analysing and conducting behavioural research will help make students better managers, again: little emphasis on skills training) and experiential learning (e.g., Kolb, 1984), with focus on developing self awareness and behavioural skills (Whetten & Cameron, 1984). However, such exercises and discussions often took place in a theoretical vacuum. Whetten and Cameron recognize the value of all three pedagogical traditions and integrate them into their skill training approach (five step learning approach: skill pre-assessment, skill learning, skill analysis, skill practice, skill application). This learning approach is followed for each of their set of nine skills: (1) developing self-awareness, (2) managing personal stress, (3) solving problems creatively, (4) establishing supportive communication, (5) gaining power and influence, (6) improving employee performance through
motivation, (7) delegating and decision making, (8) managing conflict, and (9) conducting effective group meetings.

- AMA/McBer (American Management Association) views the set of managerial competencies as a system in which single parts are viewed in relation to the other parts (Albanese, 1989). Similarly, the AMA/McBer model reflects the view that a manager’s competence can be understood only if each of the competencies is examined in the context of the entire set. For this purpose the model proposes five clusters of competencies:
  a. Goal and Action Management Cluster
     - Efficiency Orientation, Proactivity, Diagnostic Use of Concepts, Concern with Impact
  b. Leadership Cluster
     - Self-confidence, use of oral presentations, logical thought, conceptualisation
  c. Human Resource Management Cluster
     - use of socialised power, positive reward, managing group process, accurate self-assessment
  d. Directing Subordinates Cluster
     - developing others, use of unilateral power, spontaneity
  e. Focus on Others Cluster
     - self control, perceptual objectivity, stamina and adaptability, concern with close relationships

- According to Viitala (2005), competence and skills are used interchangeably in the relevant literature. Furthermore, there exists considerable doubt whether competencies can be extensively categorized and labeled as they often overlap, and thus commonly suffer from ambiguity (Viitala, 2005). Six clusters of managerial competencies could be established by Viitala when integrating elements from different competency models introduced in the literature (Klagge, 1998; Mumford et al., 2000; Katz, 1974; Pavett and Lau, 1983; Hogan & Warrenfeltz, 2003; Conger, 2001; Carrington, 1994). This integration ended up in a competence pyramid. This pyramid consists of competencies, starting from tip (most visible) to base (least visible):
  f. Technical competencies
  g. Business competencies
  h. Knowledge management competencies
  i. Leadership competencies
  j. Social competencies
  k. Intrapersonal competencies

- The PRO-NET 2000 initiative is sponsored by the US Department of Education and identifies management competencies (for managing adult education programs) which reflect seven broadly defined categories:
  a. Leadership skills
  b. Instructional leadership
  c. Resource management and allocation
  d. Staff supervision
  e. Program monitoring and reporting
  f. Professional development practices
  g. Community collaboration

Performance indicators operationally define each competence. These performance indicators identify skills, behaviours, or practices that demonstrate the existence of the competence (‘evidence’, not necessarily a formal document) (see e.g., Sherman et al., 2002). The project has developed a Management Competencies Assessment Instrument (MCAI) with 4 competence levels.

Thereherepresentedmodelsarethefoundationforthedevelopmentofaninitialtopdowncompetence-modelthat will be used to allow users to find learning resources related to competences. These models are currently discussed with stakeholders of the project (business schools and SMEs) and an initial agreed competence model for the domain and learning resources is in development. These discussions already showed that the two main stakeholders groups have different requirements for competence based search for learning resources. While most business school are able to search and express their need for learning resources based on competence descriptions the SMEs need alternative approaches for competence based search. One of the stakeholder partners supports a network of SMEs in Belgium with consulting and training. This case will be shortly introduced next.
PLATO: The stakeholder perspective
The PLATOTM idea and methodology is a program invented by SPK and focuses on the development of SME’s by a unique partnership with large companies and a network learning strategy. The process is centered on several groups of SME’s running in parallel and comprising 10 to 15 SME participating owner/managers and different volunteer facilitators (coaches) from large (multinational) companies. Each group meets once a month over a two-year period to address a wide range of management issues and to consult, learn, network and “grow” with each other. Invited guest speakers provide specialist support and technical information. SME owner/managers have an excellent opportunity to share experiences and learn from one another, have access to advice and assistance from specialists in large companies and broaden their views through invited speakers and by participating actively during the monthly sessions.

Based on the experience from PLATOTM-projects one can confirm that existing open content (OER) is underused within the SME business sector. The SME’s that have been enrolled in previous PLATOTM-projects – app. 1200 SME’s for the Kempen area in Belgium - do communicate with each other and exchange management information on a limited basis. The management content that invited guest speakers provide is not enough to solve the problems that SME owners encounter in their day-to-day business environment. Although SME businesses differ in terms of sector/market and in terms of maturity, it is usually the same set of problems or problem-areas that are recurrent.

Based on an analysis of problems of these SMEs mentioned in consulting interviews in recent years we have developed an initial problem collection for SME stakeholders in OpenScout. Looking into the initial list of problems one can cluster these problems into 6 main groups: strategic issues, commercial problems, innovation, financial issues, leadership and HR problems and finally continuity and succession. I.e. most SME owners struggle with new strategies to follow, how to innovate and develop their organisation, how to “manage” the relationship with their banks, how to retain and hire the right people, how to make sure that succession is solved etc.

The available OER can be used to answer the need for management content providing the SME owner is guided and helped to find and re-use this available OER. The OpenScout project can contribute to this need by delivering an application and a set of tools to help SME owners to find the relevant management content, specifically for his/her need(s) at that moment in time. These needs will differ based on the specific problems the SME owner encounters due to his specific market situation or due to his specific stage of development or acquired competencies. The key to the SME lifelong learning focus is to offer a simple, fast and easy-to-use application where the SME owner is guided and helped to find the relevant piece of OER in his mother tongue, based on the SME owners’ competencies. For this purpose we are developing several alternative approaches to find and enrich learning content from the OpenScout infrastructure with competence related information. These approaches are discussed next.

Problems and purpose tags as mediators for competence descriptions
While we have described above the top down perspective of competence services we are aiming at providing additional bottom up services for competence related information. While the competence models will be designed and updated by domain experts the OpenScout environment will also offer different possibilities for end-users to use alternative methods for finding and enriching content with competence related information. Here we have decided to offer two alternative solutions: Purpose tags and a problem collection.

User tagging has been one of the participatory functionalities that have been introduced through social software applications and specifically social bookmarking tools like Delicious (free online service) or Scuttle (open source solution). Instead of using expert-controlled taxonomies or ontologies to classify digital objects like in traditional library approaches so called folksonomies are constructed by users of the resources (Shirky, 2003).

Mathes (2004) discusses several advantages and disadvantages of user tagging. Folksonomies offer different possibilities to browse content and with high user rates so called “desire lines” can emerge from the tagging behavior of the users (Merholz, 2004). Besides a general domain related tagging (What is a resource about?) that will be offered within the general infrastructure we will implement a so called purpose tagging (What do users do with the resource?) (Strohmaier, 2008) to add competence related information to the federated learning resources. This should offer alternative ways for end users to describe competences or skills that they see related to resources from the OpenScout platform.

Another option for end-users of the OpenScout platform and specifically for SMEs is the use of a problem collection. Many users, in particular in SMEs are not familiar with the concept of competences. Thus, competences are often not explicit or understandable for users – not all learners think in terms of competences or proficiency levels (as also many curricula do not yet state clear learning outcomes and competences). Additionally, competence based search is not familiar to users: Most users using search engines or repositories are used to search for contents, but not for competences. There is a lack of understanding how to describe a competence in a google-alike search
field. Last but not least, stakeholders such as SMEs use learning and training activities for a very pragmatic reason and short to medium time horizon: in order to solve problems! Therefore, it is necessary to search for the more familiar concept of problems to be solved. The European Qualification Framework (EQF) definition can also be seen as a skill or ability to solve problems. Pawlowski et al. (2010) define competences as “[…] a collection of skills, abilities, and attitudes to solve a problem in a given context. […] Generally, we need to describe
- Competences containing skills, abilities and attitudes at a certain level of complexity.
- Problems denoting situation in which competences are applied and
- Context in which the problem solving is performed.”

Based on those observations and experiences, an alternative approach is to relate competences, context and, in particular problems – users might be able to describe the problems to be solved better than underlying / necessary competences. Pawlowski et al. (2010) have described the following description of competences in relation to problems:

<table>
<thead>
<tr>
<th>Concept</th>
<th>Description</th>
<th>Sample Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competences</td>
<td>Description of competences /&amp; learning outcomes to perform a task</td>
<td>Type of competences, description, subject, level (proficiency level from EQF), complexity</td>
</tr>
<tr>
<td>Problem</td>
<td>Description of a problem in which a competence should be applied</td>
<td>Situation description, actors, type of tasks, expected outcomes</td>
</tr>
<tr>
<td>Context</td>
<td>Description of the environment and influence factors in which a competence is applied</td>
<td>Descriptions of cultural (e.g., country, country characteristics), institutional (e.g., Higher Education, enterprise), economic (e.g., time &amp; budget constraints), location (geographic location, environment), technical (technical requirements, systems) context</td>
</tr>
</tbody>
</table>

As an example, a company might search for the competence of “the ability to resolve conflicts in a global team in a small outsourcing software development project between Finland and Russia”. The pure content search would lead to a waste, unmanageable amount of results for “conflict management” or “global teams”. The competence search would be far too complex to be made explicit. Our divided approach would let the user search for
- Problem: resolving, communication problem
- Context: Global team, software development, Finland, Russia

Thus, the specification is reduced to the concrete area of application and value-creation. Via this description format, competences can be related to problems, enabling for example a combination of competence- and problem-based search.

Based on this concept, OpenScout has built an initial problem collection has been entered into a rating and commenting system and is currently in a review phase through the stakeholders. In this phase the SME managers can see if the problem collection which was constructed through a desk analysis of consulting talk protocols mirrors their real problems and they can rate, prioritize and comment the problems. In addition they have the opportunity to add new problems to the collection if some are missing. For this process the initial problem collection has been entered into a “social content management system” with features like rating, commenting and adding of content (see fig. 3).
By this approach, we enable new forms of search which are intuitive and valuable for users, instead of supporting complex competence-based search activities only. For stakeholders from business schools we are currently exploring how we can follow a similar approach based on cases which are an important format in the domain.

**Discussion, summary and outlook**

The OpenScout project is a novel activity in the field of business and management education since it connects formerly separated open learning resources from different distributed learning object repositories in the domain. One key implication is the transition of a content based paradigm towards competence based work. First of all, by using problem descriptions we directly address stakeholder needs and requirements: finding a solution for a problem and thus value creation in the business context. Secondly, we raise awareness on the concept of competence-based education and training. Thirdly, we provide concrete mechanisms for searching and finding meaningful resources for the academic and business context.

In this contribution we have introduced the main aims and initial components of the OpenScout platform. We have discussed the initial federation infrastructure that allows end users to search and re-use open educational resources (OER) from the domain of business and management education. To extend this infrastructure with functionalities that allow users to find resources related to competences we have first summarized some recent publications about the topic of competence based management education. Then we have introduced some selected competence models for the domain. Based on the example of the PLATO network we have identified the need for alternative methods to add and find competence related information to learning content from the OpenScout platform. Finally we have proposed two different ways of offering alternative competence services to different stakeholder groups of the project, namely purpose tagging and problem collections. These different top-down and bottom-up methods to find and add competence-related information to learning content from the OpenScout platform will be evaluated in close cooperation with business schools and SME’s in the consortium.

**References**


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Twitter as an Emerging Technology for Business School Students: Learning and Engagement in a Cross Cultural Environment

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Abstract: Given the explosion of Twitter, as both a personal communication tool and as a business productivity tool, this paper explores ways to incorporate Twitter into higher education business courses. The paper reflects on the use of Twitter in a month-long project comprised of upper-class undergraduate students. The purpose of the project was for students to learn about and use Twitter as an emerging Web 2.0 social networking technology and evaluate its potential as a business tool. In order to provide an opportunity to explore the use of Twitter across different cultures, students from two business classes – one from the United States and one from South Africa -- were brought together to work in virtual teams. The paper ends with a summary of student experiences highlighting the challenges encountered in the project, and lessons learned.

Introduction

What is Twitter? For those who do not yet know, Twitter is a free social networking and micro blogging service that enables its users to send and read messages known as tweets. Tweets are text-based posts of up to 140 characters displayed on the author's profile page and delivered to the author's subscribers, who are known as followers. Senders can restrict delivery to those in their circle of friends or, by default, allow open access (www.twitter.com, 2010).

Introduced in 2006, Twitter has over 80 million users today, including hundreds of companies, with over 6 million new accounts created every month. Many third-party software solutions have been built, by companies such as iPhone and Blackberry, to help users manage Twitter feeds, upload photos, link to photos, or even find “Twitizens” who are near the user geographically (Johnson, 2009). The numbers are deceptive, however. Forty percent of all accounts have never sent a single Tweet. In a single month, December 2009, only 17% of registered Twitter accounts sent a Tweet – a small fraction of the Tweeter universe and a very small fraction of the cell phone and internet community (RJMetrics, 2010). It seems that the vast majority is simply “in the pool” and figuring out how, or if, they want to use it. Meanwhile, third parties are still building applications in order to be ready for the expected explosion of active users. According to Johnson (2009), that explosion is coming. “Every major channel of information will be Twitterfied in one way or another in the coming years: News and opinion, Searching, and Advertising.”

If Twitter is likely to impact business in such a profound manner, business students will need familiarity with Twitter as a business tool – both as a company tool and as an individual productivity tool. This paper explores ways to incorporate Twitter into college courses, specifically, business courses. The paper reflects on the use of Twitter in a month-long project comprised of upper-class undergraduate students. The objectives of the project were for students to learn about and use Twitter as an emerging Web 2.0 social networking technology and evaluate its potential as a business productivity tool. In order to provide an opportunity to explore the use of Twitter across different cultures and gain experience working in virtual teams, students from two classes -- each in a different country -- were brought together to work in virtual teams. The two classes included an Information Technology honors course with students from South Africa (SA) and a senior level Operations Management course in the United States (US). The paper provides a background on the use of twitter in business today, the use of twitter in the college classroom today, the assignment design of a course project for a business class including its goals and objectives, a summary of student experiences which highlight the challenges encountered in the project, and lessons learned.

Business Uses for Twitter

Twitter is a little different from other communication environments. It is not a phone call. It is not instant messaging. It is not an email. As David Carr (2010) of the New York Times succinctly states: “On Twitter, anyone may follow anyone, but there is very little expectation of reciprocity.” One posts to Twitter, that is, and creates a Tweet, and the
content sits in cyberspace waiting for one of that person’s followers to connect and view its content. Choosing who to follow becomes key. Carr continues, “By carefully curating the people you follow, Twitter becomes an always-on data stream from really bright people in their respective fields, whose tweets are often full of links to incredibly vital, timely information.” That can be extremely valuable as a productivity tool for any individual in a company trying to stay current and competitive in our rapidly changing world.

But that is just the beginning. Business uses of Twitter continue to emerge. Hundreds of large companies use Twitter for marketing. Starbucks Coffee announces promotions. Whole Foods uses Twitter as a living FAQ for its 1.7 million followers. Jet Blue provides Twitter followers with flight information. Ford wants to hear feedback from their customers (Knouse, 2010). Companies use Twitter for a variety of organizational purposes including as a marketing or public relations tool (e.g., notifying customers, events update, getting feedback), to share ideas or communicate about what projects they’re working on (internally and externally), and to keep track of what competitors and others are doing (e.g., networking with friends; linking to others’ websites and articles). In addition, small businesses are using Twitter to track comments about their company and respond to problems. A 14 seat ice cream shop keeps their 300,000 followers up to date on the latest flavors (Pattison, 2010).

247WallSt (2009) identifies ten current uses of Twitter in business that will change how business is done in the future:

- making old world advertising work by encouraging Twitter feedback from outdoor media like billboards;
- hyper-local marketing by having customers and owners of local, small businesses (e.g., a pizza shop) — thereby creating one-to-one communication between the customer and the store;
- turning Wall Street on its head when like-minded people (e.g., people interested in a particular stock) connect and share current information through Twitter;
- making blogs count as Twitter becomes more pervasive and thus becomes a more powerful channel for current information – further pushing aside traditional news sources such as cable;
- new ways to get consumer data, nearly instantaneously;
- helping TV and print by adding Twitter as a complimentary channel that is more pervasive;
- expanding the power of micropayments where Twitter is used (in conjunction with a paypal-like function called twitpay) to pay for day-to-day expenses;
- changing the telecommunications business model since Twitter is less of a load on a telecommunications systems than instant messaging;
- a new way for the government to reach you, for example, during a natural disaster;
- charity begins online where non-profits can communicate quickly and cheaply through Twitter (and even secure donations).

So, while Twitter is not yet mainstream in business, its use is already significantly changing how many businesses conduct their business. The next section discusses twitter as a pedagogical tool in higher education.

Twitter Usage in Higher Education

Twitter, one example of a Web 2.0 tool as noted above, creates new possibilities for use in teaching and learning. McLoughlin and Lee (2008, p.16) discuss how Web 2.0 tools have created a mechanism for “Pedagogy 2.0.” highlighted by opportunities for participation, personalization, and productivity. Twitter is one of the current social networking tools that are being used in a growing number of universities as a learning tool, both inside and outside the classroom. What Twitter’s impact will be in higher education is only now evolving, and research on the use of Twitter for classroom instruction and application is just beginning to emerge.

One of the few studies so far conducted on Twitter’s use in Higher Education is a Faculty Focus (2009) survey, “Twitter in Higher Education: Usage Habits and Trends of Today’s College Faculty.” The authors surveyed nearly 2000 higher education professionals. Their findings indicated that about one third (30.7 percent) had used Twitter in some capacity; more than half (56.4 percent) indicated they had never used Twitter while the remaining 12.9 percent had experimented with Twitter but no longer used it. Of those using Twitter the most common uses include staying current on news/trends, networking with colleagues and experimenting with Twitter use in the classroom. Those respondents who were not currently using Twitter cited reasons such as questioning its educational relevance, concerns that it may create poor writing skills, lack of knowledge of how to use it and not having the time for exploring it. Overall, as in business, Twitter is at the stage where there are many examples of its use but not much history allowing one to determining its effectiveness.

Dunlap and Lowenthal, (2009a) provide an overview of how Twitter can be effectively used in instruction. They argue: “. . . if Twitter participation is initiated by a learning need and subsequently driven by learning goals and
objectives then the activity is relevant and purposeful, and Twitter time is well spent.” They highlight the following as benefits of using Twitter:

- allows for the just-in-time, free-flowing connection between and among students and faculty needed to support student engagement, especially in on-line-education settings
- helps students build relevant PLNs (personal learning networks) that support their learning and professional development while enculturating them into the professional Community of Practice (CoP)
- encourages students to reflect on what they share publicly and how to use Web 2.0 tools like Twitter to establish a professionally appropriate footprint
- allows us to continue our connections with students long after our courses end.

Faculties are experimenting with Twitter using a variety of class room related applications. We think of these applications as “toolkits” for instructors (Sherer & Shea, 2002) and for student applications of Twitter. Based on Johnson’s (2010) lists of Twitter uses, applications may include:

Instructor’s Toolkit for Classroom Instruction: These applications mainly focus on increasing communication between and among faculty and students. They include: engaging students in discussion in large group classes; conducting out of class discussions; using as a backchannel during lectures; polling; providing students additional resources and current events related to course topic; sharing learning experiences across distances in small manageable chunks; summarizing/synthesize articles or other media precisely; and helping connect students with people of other languages, viewpoints, perspectives.

Student’s Toolkit for Learning: These applications mainly focus on student learning and the development of their own Personal Learning Environment (PLE). They include: researching a topic; creating an online social presence; creating a learning network; gaining professional exposure; sharing of articles and other media relevant to course topic; asking questions; seeking help or advice on a project, requesting and sharing resources; sharing blog posts; following leading thinkers in one’s field; connecting with a professional community of practice; searching for jobs; sharing what one is learning in a course/ conference; and reflecting on one’s learning. Many of these activities focus on getting ready for life after graduation.

Twitter’s use as a pedagogical tool appears to be here to stay. However, the extent, variety and effectiveness of the many possible uses presented in this section are still unclear. Using Twitter requires extensive preparation, time commitment and engagement by the faculty – and an effective assignment design. Dunlap and Lowenthal (2009) identify three overall positive results that can result from using Twitter in instructional activities: enhanced social presence; student engagement; and professional preparation. They caution, however, that like all social-networking tools, the “value of the experience hinges on three things: who you are connected with; how frequently you participate; and how conscientious you are about contributing value to the community.”

The next section describes a student project used during AY2009/2010 to introduce Twitter as a professional tool and explore its use in business.

Sample Twitter Project
During the Fall 2009, a one month virtual team class module was conducted between a senior level Management Information Systems class required for Operation Management majors at the University of Massachusetts Dartmouth in the United States, and a senior level honors Information Technology class at the University of KwaZulu Natal in South Africa. The goals of the module related to Twitter were for students to use Twitter as an example of a microblogging tool, by carefully exploring its impact in five areas: business, politics, education, media, and knowledge management – and give students a chance to work in a virtual team setting with fellow students from a different culture and part of the world. The students used: the Social Learning Network (SLN, http://specialtopics.grou.ps/) and Twitter (www.twitter.com) for all communication; http://bit.ly/, http://tweetstats.com, http://whatthetrend.com, and http://trendistic.com to help track each student’s Twitter activity and trends; and http://backupmytweets.com to facilitate backing up all student Tweets on a regular basis.

The students working within this module used a scaffold learning approach where each activity contributed to the final assessment. In activity 1, students were asked to set up their own Twitter account, set up a http://bit.ly account to help track activity, find two quality articles related to microblogging use, tweet a comment and link to the article through their Twitter account, and become a follower to the instructors so that instructors could follow the students and directly message them if needed.

In activity 2, students continued to gain experience using Twitter, got to know their colleagues better, and continued to explore the 5 key areas where Twitter was having an impact. Students created personal web pages on the SLN to help students get to know one another a little better. Students were required to: leave a note on the wall of a number of the personal web pages; post their own Twitter ID on their wall; follow all the students in the class;
tweet regularly (there could be some social Tweets but students had to include Tweets related to the course material) in a way to attract followers.

In activity 3, students learned to: use http://backupmytweets.com for backing up Tweets; explore and share two, available Twitter add-ons; learn and share about Twitter etiquette; continue exploring Twitter use in the 5 key areas by exploring classmate Tweets and ReTweet the ones each student found interesting; and for each student to continue growing his/her followers.

In the final activity, students continued exploring key areas by finding a relevant article and posting it to the Blog within the SLN. Students also explored trends within their Twitter history using http://tweetstats.com, http://whatthetrend.com, and http://trendistic.com in order to assess the effectiveness of the tweets based on quality, link to trends and time of post.

In all, the module took just under one month to complete. It was not the only coursework the class was working on during that period but there was time taken in every class meeting to review progress and answer questions. Instructors from each class, and from different countries, communicated regularly through email and Skype phone calls. The next section describe student reactions to the module.

Student Feedback
Student feedback came anecdotally, through regular discussions in class concerning progress and next steps. The students were also asked to formally answer three questions at the end of the module. Feedback for each question follows.

• Question 1: What do you think of Twitter / microblogging?
Over 60 percent of the SA students were positive about Twitter / microblogging as compared to some 80 percent of the US students who were negative. The US students were negative on Twitter from their first exposure to it – and their opinion, for the most part, never changed. They thought Facebook would be a far better tool for both the classroom and business. The SA students, while often skeptical at the beginning, typically became fans of Twitter after using it for a week or two. Students mentioned “how addictive reading simple 140 character messages can be”, “how much information can actually be conveyed in such a small space”. One interesting comment about the nature of Twitter was “Twitter is a very one-sided platform geared toward content distribution and delivery rather than interaction.”

• Question 2: Is it a good tool for business?
Almost 70 percent of the SA students were positive about Twitter as a business tool. A similar 70 percent of the US students were negative on Twitter as a business tool. The US students just couldn’t see any value. In contrast, some of the SA students mentioned how Twitter “can boost networking potential and knowledge sharing”, can be a “good source for the latest information in the industry”, “can be used to spread word quickly”, and how it “allows for collaboration in a stress free environment.”

• Question 3: What will be the future of Twitter / microblogging? In five years? In ten years?
The US students generally thought Twitter did not have future but were fans of Facebook as an alternative. The SA students were positive on Twitter in the future and fully expected many new applications to be built in the near future to make Twitter even more useful. The only caution brought forward by the SA students was the high cost of Internet service in South Africa which limits many students to using tools like Twitter only at school, on school machines.

The next section is a discussion section which summarizes our experiences and lessons learned.

Discussion
Overall, there was a distinct difference between the reaction of the South African (SA) class and the class from the United States (US). The SA class members were somewhat reluctant and skeptical but, for the most part, became fans of Twitter after experience showed them the benefits. The US class, overall, initially had a negative reaction to Twitter and it never changed. Classroom discussion of the project was frequently filled with “Twitter sucks” throughout the project. It should be noted that the SA class was an elective IT Honors class filled with the best IT students in the program. The US class was mostly Operations Management majors who were required to take the class. It is not surprising that the IT group was more willing to dig into Twitter (even though their first impression was negative) as opposed to the US students who weren’t as invested in either the class or the topic.

Further, the connection between students of the two countries was minimally successful. There were comments on both sides about how additional time and activities would have been helpful at the front end of the...
module. Students indicated this would have helped the students in the two countries get to know each other a little better.

There are two productive approaches to evaluating the module. One focuses on the module’s use of Twitter as an educational or pedagogical tool and the other focuses on the use of Twitter as a business tool. In order to evaluate the use of Twitter as a pedagogical tool, we suggest using the guidelines suggested by Dunlap and Lowenthal (2009b):

- Establish relevance for students: The students read about current use of Twitter in general and within 5 key areas – including business and education
- Define clear expectations for participation: Activities were specific, focused and well defined
- Model effective twitter use: Instructors twittered the students as part of the project
- Build Twitter-derived results into the assessment: A number of add-on applications were used so both the students and the instructor could evaluate Twitter activity and analyze trends
- Continue to actively participate in Twitter: Follow-up activities using Twitter were not established. Any further Twitter activity was initiated by the students.

While there is room for improvement, the module covered their guidelines fairly well.

As for Twitter as a business tool, the project can be evaluated based upon a report by Gartner (2009) which categorized four different ways that companies are using Twitter: direct, indirect, internal and signaling.

- **Direct** refers to when a company uses Twitter as a marketing or public relations channel. Many companies have established Twitter identities as part of their corporate communications strategies, much like corporate blogs. They Tweet about corporate accomplishments, distributing links to press releases or promotional Web sites, and respond to other Twitterers' comments about the brand.
- **Indirect** refers to when a Company’s employees use Twitter to enhance and extend their personal reputations, thereby enhancing the company’s reputation. Good Twitterers enhance their personal reputation by saying clever, interesting things, attracting many followers who go on to read their blogs.
- **Internal** refers to when employees use the platform to communicate about what they are doing, project they are working on and ideas that occur to them.
- **Inbound Signaling** refers to Twitter streams that provide a rich source of information about what customers, competitor and other are saying about a company.

Using these criteria, the class module described in this paper only scratched the surface. The project did include *Indirect* activities where students were regularly encouraged to create tweets that would entice more followers. *Internal* activities included using Twitter to share their findings and ideas.

As we contemplate how we might incorporate Twitter into business school curricula, we believe one alternative would be to embed Twitter within two classes which are standard core, required business classes – the core MIS class and the capstone strategy class. First, the core MIS class, typically taught in either the sophomore or junior year, would focus on using Twitter as a classroom tool. A streamlined version of the project described in this paper could serve as the foundation for this assignment. Secondly, the capstone strategy class could be used to explore how Twitter can be used as a business tool. Overall goals should arguable incorporate activities based on Gartner (2009)'s four categories. In addition, there are other opportunities for taking advantage of Twitter in order to provide students opportunities for enhanced social presence, student engagement, professional preparation and student learning (Dunlap and Rosenthal, 2009b). Some specific examples include: communication (announcement, connect with classmates, faculty, professions, polling, etc.); class projects and discovering content (connect with professionals, other interested folks); and finding people in business or academia to follow; getting ready for life after graduation (establish a web presence, following your occupation, start looking for a job, etc.).

**Conclusion**

While it can be argued that Twitter is not yet a mainstream application, it does seem like Twitter is here to stay. Hundreds of companies use Twitter in a variety of ways every day. Close to 100 million people have, at least, signed up for a Twitter account. Business schools would be remiss if they did not prepare their students to use Twitter as both a personal productivity tool and as a way to support the company goals of their future employers. Incorporating Twitter into course learning activities requires time and creativity on the faculty’s part. However, the potential for student’s to be connected with current, online information along with people, organizations and associations is rapidly becoming a necessary skill and will be expected in future business environments. The issues we have raised contribute to the ongoing conversation related to the challenges and opportunities available through the recent explosion of Web 2.0 tools, specifically Twitter.
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Organizational structure of online academic advising. A case study

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Abstract: Academic advising is a key element for learning success in virtual environments that has received little attention from researchers. This paper focuses on the organizational arrangements needed for the delivery of academic advising in online higher education. We present the general dimensions of organizational structures (division of labor, hierarchy of authority and formalization) and their possible forms when applied to academic advising. The specific solution adopted at the Open University of Catalonia is described and assessed in order to draw general conclusions of interest for other institutions.

Introduction

The process of online learning is based on the existence of a whole range of individual and group services, which complement the course learning resources and are, in fact, the main added value that educational institutions offer to students (Tait, 2000). These services must be able to respond to the needs of students before, during and after the learning process. Thus, they should take into account that the student is the protagonist of the learning process and that developing such process requires support in two contexts: the learning process itself, and the institutional systems which surround it (Thorpe, 2002: 289). Support related to the online learning process has received extensive attention, and numerous studies have been published on teaching methodologies, evaluation systems, teacher-student and student-student relationships in the virtual classroom, and so on. In contrast, there are much less papers published on support related to the institutional systems in online higher education, although this issue is receiving growing attention in the last decade (see, for example, LaPadula, 2003; Ludwig-Hardman & Dunlap, 2003; McCracken, 2004; Steele & Thurmond, 2009; Tait, 2003; Thorpe, 2002).

According to Thorpe (2002), support related to institutional systems includes helping the student to know what is on offer, how to apply, how to claim a refund, make a payment, choose a course, etc. These tasks involve two distinct groups of activities: the most administrative or bureaucratic ones (the processes of applying, paying, or claiming a refund, for example), and a second group that requires academic knowledge of the program in which the student is enrolled (knowing what is on offer, choosing courses). The first group is linked to administration services, while academic advisors or counsellors usually perform the second group.

This paper focuses on the organizational arrangements needed for the delivery of academic advising in online higher education. We will use the term academic advising to refer to the support that learners receive regarding their operation within the context of an academic program. In this context, students need support to understand the virtual environment where they will be immersed, to establish relations with their peers, to plan their academic goals and keep striving towards them, to select the subjects they will study each semester, to select extra-academic activities that can improve their learning experience, etc.

Advising activities can be performed in quite diverse circumstances. Particularly, the advisors may have diverse kinds of bonds with the university, they may be assigned quite diverse tasks, and they may be included in different departments or units. These organizational aspects may indeed impact on the final delivery of advising as perceived by the students, as well as on the work burden borne by academic and administrative staff. In spite of these potential effects of organizational arrangements for academic advising, there is extreme shortage of literature on the subject. As a contribution to fill this gap, this paper analyzes the online academic advising system in a virtual university, with a special focus on its organizational structure.

This paper will discuss the different elements that have to be taken into account in order to develop an effective organizational design for academic advising. After a brief, theoretical presentation of such items, the specific solution adopted at the Open University of Catalonia (UOC, in Catalan: Universitat Oberta de Catalunya) will be described in order to give flesh to the quite abstract concepts used in organizational theory. It is intended that, through the study of this particular case, other institutions will be able to derive useful insights for their implementation or refinement of their online academic advising system. Thus, the remainder of the paper is organized as follows. Section 2 presents the theoretical background. Section 3 describes the main features of the UOC and the organizational structure of its academic advising activity, which is assessed in section 4. Finally, Section 5 offers some concluding remarks.
Organizational structure for academic advising

Classical organization theory states that there are three key components that define any organizational structure (Hatch & Cunliffe, 2006: 103): the division of labor, the hierarchy of authority, and formalized rules and procedures. Consequently, these three aspects have to be considered when designing the structure for academic advising in a university.

**Division of labor** refers to what tasks will be assigned to the individual workers, and it can lead to more or less specialized workers, that perform specific or general activities. In the context of academic advising, we can find different degrees of specialization. In the less specialized side of the spectrum, there are those institutions where such activities are assigned to faculty members who have to add advising to their habitual tasks of research and teaching of specific subjects. In these cases, which are quite frequent in Spain, faculty members are not specialized in advising, and may even perceive it as an annoying burden. This may decrease faculty members’ effectiveness in and students’ satisfaction with academic advising. On the other hand, academic advising may be assigned as the only task to be performed by a group of specialized individuals.

**Hierarchy of authority** defines formal reporting relationships that map the vertical communication channels in an organization (Hatch & Cunliffe, 2006: 104). Pardee’s (2004) describes four types of models for delivering advising services according to their degree of centralization. She describes them in terms of “where are advisors housed”, which is a notion that may be not applicable in virtual universities, since advisors work from home. However, her models really refer to who is ultimately responsible for advising. In the centralized models, professional and faculty advisors are accountable to one academic or administrative unit devoted exclusively to advising. In the other extreme, in the decentralized models models professional or faculty advisors are accountable to their respective academic departments. Finally, there are shared models where both a central advising unit and academic departments share responsibility for advising issues. According to the Sixth National Survey on Academic Advising conducted in 2003 by ACT (Habley, 2004) in the United States, more institutions use a shared model of delivering advising services (55%) than use centralized (32%) or decentralized (14%) structures. This distribution is similar to that found in 1997 when the Fifth National Survey was conducted. In general, authors suggest that shared models lead to better student service and faculty satisfaction (see Allen & Smith, 2008; King, 2002).

**Formalization** involves the extent to which explicit rules, regulations, policies and procedures govern organizational activities, and it tends to reduce the amount of discretion employees have in performing their work tasks (Hatch & Cunliffe, 2006: 104-105). Formalization of academic advising will be higher when the institution has written advising policies and handbooks for advisors, it has developed a job description for the academic advisor, or it uses other mechanisms that specify how advisors should make decisions and perform work.

Organizational structure of academic advising at the UOC

**Context: The UOC and its students**

The UOC is a fully online university that was founded in 1995 by the regional government of Catalonia (Spain). It was created with the intention of appropriately responding to the educational needs of people committed to lifelong learning, and to make maximum use of the potential offered by the information technologies to complete an educational activity. In 2009, the UOC had over 200 faculty and more than 2,300 teaching collaborators (academic advisors and subject tutors). The educational offer of the UOC consists of more than 850 qualifications for bachelor degrees, and first and second-cycle studies; postgraduate training; open programs; and PhD.

In the academic year 2008-2009, the UOC had over 54,000 students enrolled in its courses, 43,366 of which were studying officially recognized qualifications. The typical UOC student is quite different from the student in face-to-face universities. Many of them left education in order to enter the workforce on completing secondary school or before finishing their degrees, and returned to education some years latter to get a university degree. Almost 75% of the students are between 25 and 40 years old, with an average age of 30. Nine out of ten have a job, and four out of ten have children. This results in an intense shortage of time available to devote to study, which corresponds with the mission of the UOC to be accessible to communities that, due to lack the time or territorial mobility, cannot attend other universities.
Division of labor
Division of teaching labor is intense at the UOC, as the tasks traditionally assumed by the faculty in brick and mortar universities are divided between different individuals: the faculty, the subject tutors and the academic advisors.

- The members of the UOC faculty are responsible for academic aspects of organizing and running one or more areas of content and, in particular, for tasks related to coordination with teaching collaborators, for the design and development of teaching materials, and for assessing students at the end of their courses. They also carry out research based on their field of academic specialization, and participate in research into e-learning methods and techniques.

Personal support to students at the UOC is provided by teaching collaborators (the subject tutors and the academic advisors), who are professionals that work with the university in a part-time, virtual mode. They are predominantly teachers in other higher education institutions, although there are also professionals in areas related to their program. Teaching collaborators accomplish two different roles:

- The role of the subject tutor is to direct the learning process that students undergo in each of the subjects they study, to correct their exercises and tests, and to resolve any doubts or queries they may have in relation to the content of each subject. Tutors normally use the Virtual Campus to perform their tasks from home or workplace, wherever they may be in the world.

- The academic advisors accompany and guide students from when they enrol at the University until when they complete their studies. Advisors monitor students’ academic progress and become their main source of advise and assistance in relation to any matter that concerns the UOC and does not strictly correspond to a specific subject. With increasing frequency, advisors are alumni of the same program.

More precisely, academic advisors accomplish the following functions:

- To facilitate that students get the most out of their time and money investments. The advisor helps the student to integrate quickly in the dynamics of a virtual university program, through the provision of training and/or advice on:
  † Technological aspects: functionality of the technological platform, the basics needed to operate in virtual classrooms, the technological resources for learning, etc.
  † Administrative aspects: procedures needed, calendar and process of enrolment, assessment of prior studies, selection of the location for the final examination, etc., as well as the channels that students have at their disposal for the resolution of doubts, enquires, or complaints, among other things.
  † Characteristics of the pedagogical model of the university.
  † Students’ rights and duties.

- To enable each student to select the most appropriate learning itinerary. Advisors must have deep knowledge of the characteristics of the program and educational offer, as a whole, as well as about each student’s needs, educational goals, and time availability. Once the student’s main itinerary is selected, the advisor helps them decide their rate of progression towards graduation. This advisory role is embodied in the enrolment process. In this process, after receiving guidance from the advisor, the student makes an enrolment proposal that the advisor must finally assess.

- To encourage the students to attain the selected educational goals. This function acquires special prominence because the risk of drop out is potentially high, given the profile of students and the virtual setting. The advisor disposes of information about the academic behaviour of students (their number of connections to the virtual campus, their qualifications in the activities of continuous assessment, etc). With this personalized information, the advisor can motivate each student in moments of discouragement or unforeseen difficulties.

- To be a person of reference for students in their relationship with the university. The advisor is the person the student contacts with if he/she faces doubts, incidents or unexpected problems, special personal circumstances, and so on. The advisor must solve these problems directly if possible, or refer the student to the adequate service or person in the university.

Each student is assigned an advisor from the moment he/she expresses some interest in enrolling in the university. An advisor and around 75 students of the program share a virtual classroom, which is their natural place for group communication. Individual communication takes place mainly through e-mail, but also through the online enrolment system and by telephone or videoconferencing. The activity of the advisor is proactive (teaching on the various aspects outlined above, informing about the terms and conditions for different procedures and, above all, encouraging students) and also reactive when needed. In reactive communications, the advisor has a compromise to answer students’ questions in up to 48 hours.
Advisors are specialized around academic programs (e.g., Work Sciences, Tourism, Humanities, Psychology, etc.) with the aim that they develop deep knowledge of one program’s features, and of the profile and interests of that program’s students. But, in 2004, the UOC further specialized advisors according to the stage of advancement of their students. This reorganization was aimed to reduce student dropout in the first three semesters of enrolment, as internal studies had signalled this period as critical for student retention. Thus, the beginnings and the continuation advisor roles were introduced.

- The beginnings advisor receives new students after they have enrolled, academically orients them in all aspects of the educational program, and helps them in developing skills to navigate with maximum efficiency through the Virtual Campus. The advisor also introduces the student to the tools and resources provided by the UOC’s learning environment, so that they can attain, as soon as possible, their maximum performance. Finally, this type of advisor helps the student to know the range of opportunities that the university offers. In short, the beginnings advisor facilitates the integration of new students to the university community in a personalized way.

- After the students’ third semester, a continuation advisor is assigned, instead of the beginnings advisor. The continuation advisor focuses on advising any academic issue of the educational process, and on professional aspects linked to the field of study. This advisor also helps students deal with their needs in different academic moments. Finally, the continuation advisor gives advise on the further education strategy of the student, as part of his/her professional career.

Hierarchy of authority

In terms of hierarchy and reporting, the UOC has opted for a creative alternative, which is not found in the literature on the organization of the advisorial function. The academic advisors at the UOC have a double internal dependency, which creates a matrix structure. On the one hand, the advisors depend on the Program academic director. The director selects them, appraises their performance and decides on the renewal of their contracts. He/she provides training and advice and answers questions on everything related to the academic aspects of the program. In addition, throughout the semester, the director advises on the educational problems that may arise. On the other hand, the advisors depend on the Advisorial Function team, which is transversal to the entire university. This team is responsible for providing training and assistance necessary for advisors so that they can, in turn, train students to take full advantage of their effort. Subsequently, the Advisorial Function monitors such training given by advisors. Similarly, this team offers suggestions and monitors advisors’ activity in relation to student motivation and university procedures.

The work of the advisors, in collaboration with and dependence on the Program Director and the Advisorial Function person, is mostly carried out virtually. In accordance with the dual line of responsibility, advisors have two workspaces in the virtual campus. In the first one, the Program Director communicates with all the advisors of the program. In the other virtual room, the advisor communicates with the member of the Advisorial Function assigned to a group of programs as well as with the other advisors of those related programs. Obviously, every advisor has also a personal e-mail and can contact directly with the Program Director and the assigned member of the Advisorial Team.

Formalization

Academic advising is not highly formalized at the UOC. Advisors have at their disposal plentiful resources to develop their work, but there are not many written policies, rules or procedures that constrain their decisions. There is only one key process that is tightly bound through the use of technology: the enrolment process.

As advisors work from their homes, they need to have documents to consult when they have doubts about their work. This is specially true for newly recruited advisors, who always have face-to-face or telephone initial training sessions with the Program director and with the Advisorial Function to overcome initial difficulties and doubts. At the most general level, advisors are provided with suggestions for the use of the virtual campus, and recommendations for teaching written and virtual communications. They also have explanations on the resources they have as advisors: the virtual classroom, the students' records, the tools available to monitor each student's academic progress, and their student group as a whole. At the level of the program they are involved in, each program director whether it is necessary to develop specific documentation, and what form and content should it have. In general, there is a document with information about the academic program, the indications for the registration of specific subjects, and answers to frequently asked questions from students and advisors.

The enrolment process is developed online through a system devised to ensure that students sensibly select the courses they enroll on. Students are asked to make an "enrolment proposal" which is assessed by their advisor. The
advisor, who has information on the students’ availability and their previous academic performance, gives feedback on that proposal and eventually recommends or advises against it. Although the ultimate responsibility for enrolment lies with the student, who is considered mature enough to make their own decisions, the advisor's feedback is very important and is generally followed by the students. All these steps are recorded and kept for future consultation. In some cases (e.g., when a student wants to enroll more than 36 ECTS credits), the student must submit a request to the academic director of the program, who also counts with the advisor's opinion for or against granting the request. It must be noted that what is formalized here is the process of matriculation, but not the criteria used by advisors to develop recommendations on enrolment proposals, which are very generally stated in terms of their "feasibility" for the student.

The majority of information for day-to-day advisorial activity is provided through direct communication with advisors. Punctual, general information for teaching collaborators is unidirectionally communicated through the "Teacher's support" electronic board. However, most of the communication with advisors is multidirectional, as it takes place in shared spaces in which advisors receive and provide information both from/to the organization (the academic director or the Tutorial function member) and the other advisors.

Assessment of the UOC’s structure for advising

Dimensions of the organizational structure

Division of labor

The use of professional academic advisors, combined with the task of faculty members and subject tutors, is one of the keys for the UOC's sustainability. The faculty is comprised by a stable, low number of academics that retain responsibility for design, coordination and assessment, which are considered the "core" activities. Teaching collaborators, on the other hand, are variable in number (although changes are not steep) in accordance with the number of students enrolled each semester.

In contrast, the specialization between beginnings and continuation advisors is open to debate today within the university, as it has generated a number of disadvantages that have to be balanced with the benefits initially detected. The main advantage is that beginnings advisors have a deeper understanding of the needs of new students and how to fulfil them. The main drawback of this new model is the loss of a unique reference for the student. Students have several advisors throughout their studies, so they lose the trust they had built with their first advisor and have to start the process all over again with the new advisor.

Furthermore, in the process of transfer from the beginnings to the continuation advisor, relevant information about the student can be lost. To minimize this problem, the beginnings advisor is asked to write a report about each student’s academic progress, including other information that can have an effect on such progress, and transfer it to the assigned continuation advisor.

Another motivational effect is related to the composition of the advisee group. Before specialization, in a single advising room there were students who had attained diverse levels of progress courses within the program. Thus, those who incorporated into the group could learn from other peer who had already spent more time in the program. The more experienced students progressively obtained their degrees and left the group, which had an important motivational effect for new students, who saw that it was possible to overcome the initial difficulties they were experiencing.

This organization has also involved substantial accumulation of work for advisors, as all their advisees are in a similar phase of progression within the program. In addition, administrative complications arise in the reallocation of students from the beginnings to the continuation advisor.

Hierarchy of authority

The matrix structure used at the UOC provides several notable advantages. On the one hand, being grouped by academic programs, advisors are experts in the program in which they operate. The double line of responsibility provides diverse and timely information to advisors on both academic and administrative aspects, which improves their performance to the students. Moreover, this dual responsibility does not generate conflicts, as the program director has always the last word on academic issues (e.g., criteria for registration, recognition of prior learning, qualifications, etc.), while in administrative matters the various departments set the policies to follow.

Formalization

The task of advisors is a complex one, that has to take into account the specific and unpredictable needs of each student. Heavy formalization would not be useful in these circumstances, as no rules or procedures can be written to account for such complexity (Hodge, Anthony & Gales, 2002: 42). Instead, the UOC relies on the knowledge and judgment of advisors, and provides them with the necessary information (about their students, their program and the university's procedures) so they can make their own decisions.
General assessment
The UOC model complies with Pardee's (2004) criteria for an effective advising organizational structure, although they have been slightly adapted in order to suit online education:

- Advisors are accessible when students seek academic guidance, as they can be contacted at any time through e-mail and have the obligation to reply to any message in a maximum of 48 hours.
- There are financial, personnel, and technical resources available to support and staff the structure that is in place.
- Although there is a double reporting line, advisors are not confused by that, since they understand the difference between the issues managed by the advisorial function and the academic direction.
- Students have their advisor as their first stop to obtain information about all their academic needs.
- Advisors understand the structure and their role within the larger system, in particular their relation with other teaching figures as the faculty members and the subject tutors.
- Advisors in different programs can communicate and cooperate through the virtual spaces they share.
- The structure is conducive to sharing information and collaborating with other academic and student service units to create and implement policies that promote student development and success. The advisorial function and the program directors can easily communicate with other areas when they detect problems or devise a possibility for improvement.

In addition, periodical surveys report high student satisfaction with the service provided by the advisors. In consequence, the UOC case shows that it is possible to develop a high quality advising service through online media, with professional advisors who rely on two lines of authority.

Conclusions
Some conclusions of general can be drawn from the UOC’s experience:

- Division of labor is useful up to a certain point. The separation of the teaching roles of subject tutor and academic advisor has had very positive outcomes, as it promotes that tutors are deep into their subject content and that advisors get to know their students best. At the same time, it has proven easy to handle for students, who understand the purpose of each role and relate to them accordingly. However, the division of advising tasks based on the students’ seniority seems to have more disadvantages than advantages, as it has not clearly resulted in an improved retention rate.

- The shared model of responsibility for academic advising between academic directors and the advisorial function has been very successful since its implementation. Better information is provided to advisors and, thus, the quality of advising improves. The key for this success rests upon the clear separation of issues handled by each figure, since it allows for specialization in managing certain aspects of advising (administrative or academic). It also requires a tight coordination among academic directors and the advisorial function, given that academic decisions may have administrative effects and vice-versa. At the UOC, both interact frequently through e-mail or phone-calls, e.g. to solve doubts about ongoing problems, or to inform about changes in a program or in the university’s processes.

- Formalization cannot be intensive for tasks that are performed in uncertain contexts, which is the case for online academic advising. In online higher education, there is a high variety in students’ situations that does not allow for very specific rules to be written. Only general criteria can be developed, but each case must be treated separately by the advisor and, in case of doubt, consulted with the academic director.

Shurville and Browne (2006) highlight that the development of distance education needs a model of flexibility that results in substantial changes at both the individual and the organizational levels, which must be adequately resourced and managed. In order to develop management models for online universities, we must first find and compare management alternatives that have proved viable. However, there are hardly any models available on how to organize the online advisorial activity. This paper tries to contribute to the building of such body of knowledge, through the description and assessment of the main characteristics of the virtual advising system developed at the UOC. Despite being a particular case, the authors hope that it will be useful to other universities that are developing their first online activity, as well as for more experienced institutions that want to reflect on their existing advising system.
References


How can teachers make relevant choices in and with educational technology?

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Abstract: An increasing number of researchers have found that teachers need to adjust their teaching styles in order to facilitate the new generation of learners. The thoughtful design of online learning activities is critical to the attainment of educational outcomes. In order to enhance study success by integrating ICT in education, it is important that content, technology and pedagogy are equally balanced. Our main purpose is to review the state-of-the-art research and good-practices on integrating ICT in education using the conceptual TPACK model of Mishra and Koehler (2005, 2006). The following question will be addressed: How can we professionalize teachers in order to make appropriate choices in using ICT and therefore making pedagogical design choices that enhance study performance? By using a case-based approach, two cases will be discussed, each using a unique combination of cognition, pedagogy and technology. This leads to a number of lessons-learned that will be addressed.

Introduction

The way we search, remember, create, criticize and share information is changing which can be attributed to two main developments. First, the development, application and possibilities of ICT grow rapidly. For example, ICT tools like videoconferencing or virtual worlds - that allow for synchronous communication even between geographically dispersed learners - are available to everyone who wishes to use them. Most households in Europe have a computer. However, the use of ICT, especially in education, is more important than the actual numbers of computer users (Kahn, 2005). The second development is characterized by changes in society like an increase in internationalization and individualism. For example, the number of European students that study abroad increased by 57% between 1998 and 2006 (EUROSTAT, s.d.), the number of weblogs doubled in the last five years to 70 million blogs worldwide (Wesch, 2008b). According to Kahn (2005) the wide availability of ICT in both educational and private environments imply a paradigm shift, which is not only about several possibilities in ICT-use but also about human relations. We live in an environment where information and working together becomes more important. Or, in the words of Wesch (2008a): “It has come to show us that the information of today is not the information of yesterday or tomorrow… and so information is not really the point. Information producers are the point.”

Wesch (2008a) speaks about a r/evolution where students and teachers alike are not only the user but also the programmer or director of the learning environment. For example, students can download information and knowledge from a website owned by a person or organization outside the boundaries of the educational institute. But students can also collect information and upload it in wiki’s owned by fellow students (Hemmi, Bayne, & Land, 2009). This implies another way of communication for students and teachers, where participation and working together in blended or virtual learning environments are the central parts of the learning experience for students.

In the past, the transfer of teacher’s knowledge to students was considered as a primary method for learning. In traditional learning settings, students have to learn the teacher’s knowledge and learn by heart. However, this learning method is not useful for complex tasks and complex problems in a modern society (Hmelo-Silver, 2004; Norman & Schmidt, 1992; Vygotsky, 1978). As a result, an active approach to learning in education has become more important, whereby the teacher-centered approach is replaced by a student-centered approach (Baartman, Prins, Kirschner, & Van der Vleuten, 2007; De Rijdt, 2004; Segers, 2004; Van den Berg, Admiraal, & Pilot, 2003; Wang, 2009). Teachers and researchers agree that these changes in education add to a more constructivist approach to learning. This means that students learn to construct, build and co-construct their own knowledge in collaborative learning environments like for example Problem-Based Learning (De Laat, Lally, Lipponen, & Simons, 2007; Jonassen & Rohre-Murphy, 1999; Kirschner, Beers, Boshuizen, & Gijselaers, 2008; Kirschner & Kreijns, 2005; Pintrich, 2003; Schellens & Valcke, 2005). At the same time, in more individualistic inquiry learning settings, students are supported to actively learn, explore and build conceptual and mental models of
complex problems (Eysink et al., 2009; Resta & Laferrière, 2007; Volman, 2005). Through the increasing possibilities and applications in ICT-instruments, also called affordances (Kirschner, Strijbos, Kreijns, & Beers, 2004), and the above mentioned changes in society, it is important to know how the content of the knowledge and the pedagogy can be facilitated by the teacher. This demands a new definition of the concept ‘learning’ (Kahn, 2005). It is not about substituting new instruments for existing methods which is called substitution according to Itzkan (1994). Substitution occurs for example when a teacher uses the new interactive digital whiteboard like the old chalkboard. This limits the added value of ICT (digital whiteboard) in education. It is not about giving training in ICT-use but to have another viewpoint on the way we learn. Kahn (2005) calls this the paradigm shift as mentioned above. In the last years also the concept of ubiquitous learning has become more important. Ubiquitous learning means that learning occurs independent of time and place and learning environments can be accessed in various situations (Downes, 2005, 2008; Durkee et al., 2009; Rienties, Tempelaar, Waterval, Rehm, & Gijselaers, 2006). There will be more and more ‘mobile-learning’ because there’s almost always and everywhere access to internet through mobile phones and e-books (Armstrong & Franklin, 2008). In other words, for students and teachers alike it will be possible to search, share and (ex)change information by means of using the internet. As a consequence, the role of the teacher changes (Anderson, Rourke, Garrison, & Archer, 2001; Bernard et al., 2004; De Laat et al., 2007; Donnelly, 2004; Mazzolini & Maddison, 2003; Vonderwell, 2003). The teacher is responsible to minimize the difference between theory and practice in order to prepare students for fast changing developments in society (Resta & Laferrière, 2007). The increasing possibilities in using ICT are seen as a positive development. However, the necessary transformation of teachers is not implemented yet (Volman, 2005). The role of the teacher is changing from a more product-oriented role (focusing on knowledge transfer and learning outcomes, e.g. exam) to a more process-oriented role (facilitating the development of the student’s knowledge building during the course). Teachers are challenged to understand and apply digital methods as well as to create a strong learning environment where teachers and students take responsibility for their learning (Koecher & Mishra, 2005b; Mishra & Koehler, 2006). The teacher can be seen as a supervisor, facilitator and coach of the learning process rather than someone who only transfers his or her knowledge (Anderson et al., 2001; Gunawardena, 1995; Mazzolini & Maddison, 2003; Mishra & Koehler, 2006; Vonderwell, 2003). For example, Mazzolini and Maddison (2003) show that the role of the teacher is changing from a ‘sage on the stage’, where the teacher is lecturing and students take a rather passive role, to a ‘guide on the side’ where the teacher facilitates the learning process of the student. In the latter situation the learning environment is to a greater extend shaped by the student. Therefore, leadership qualities are becoming more important for teachers next to having domain knowledge and pedagogical skills to transfer the knowledge to students. As a consequence, students and teachers have to learn to work together in a team, thereby learning how to organize, plan, coach, reflect and negotiate (Barron, 2003; Rienties, Tempelaar, Van den Bosche, Gijselaers, & Segers, 2009; Van den Bosche, Gijselaers, & Segers, 2006; Volman, 2005). In this paper, we will address and discuss two cases of implementing ICT into educational practice using a case-based approach method (Kolodner, 2005). Each case addresses the choice and the use of an ICT-tool within a specific domain using a pedagogical approach using the conceptual model of Mishra and Koehler (2005, 2006). We will compare the various approaches of the teacher in each of the two cases and will deduct general lessons-learned when redesigning the learning environment to incorporate ICT.

When do we speak of effective ICT application in education?

There is a lot of information available on the Internet about various educational ICT-instruments. Dutch websites like www.digitaledidactiek.nl and www.surfspace.nl/nl/GoodPractices, and of course many international websites, give an overview of ICT applications and their advantages and disadvantages in education. However, if you want to use ICT to increase study success it is important to know under which conditions ICT leads to more effectiveness and a lot about this is still unknown (Valcke & Martens, 2006). The application of ICT in education does not necessarily lead to improved learning experiences for students or enhanced learning processes, study performance or redemption (Giesbers, Rienties, Gijselaers, Segers, & Tempelaar, 2009; Järvelä, Järvenoja, & Veermans, 2008; Jonassen, 2008; Jonassen & Kwon, 2001; Lou, Bernard, & Abrami, 2006; Lowry, Roberts, Romano, Cheney, & Hightower, 2006; Tu & McIsaac, 2002; Valcke & De Wever, 2006; Valcke & Martens, 2006). Research has shown that the exact opposite can happen. For example, ICT-instruments that are applied from a technical point of view, thereby not considering the learning environment, can lead to less motivation and effectiveness (Jonassen & Kwon, 2001; Valcke & De Wever, 2006). To conclude, the application of ICT does not necessarily have more value in education unless the implementation of ICT in education is well-designed and implemented.
In order to successfully implement ICT it is important to adjust the content of the course for technology and pedagogies. The availability of ICT is as important as the application in educational practice. Mishra and Koehler (2006) designed a conceptual model for successful education using ICT (Koehler, 2010; Mishra, 2010). The authors show that education is most effective when content knowledge (CK), pedagogical knowledge (PK) and technological knowledge (TK) are used and when they interact with each other as shown in Figure 1.

![TPACK Model](image)

Figure 1 TPACK model Mishra and Koehler (Mishra, 2010; 2006)

First of all, the section pedagogical content knowledge (CPK) in Figure 1 reveals which pedagogical approach matches with the respective content taught in the course. The section technological content knowledge (TCK) shows that teachers need to know how to change the course content in order to apply technologies. The section technological pedagogical knowledge (TPK) illustrates that teachers need to understand that the use of technology can change the way of teaching. The intersection of these three (TPACK, positioned in the middle), is the optimal integration of content knowledge, pedagogical knowledge and technological knowledge according to Mishra and Koehler (2006). Here, it is clear which concepts are used in technological knowledge, how pedagogical knowledge can be used in a constructive way applying technology in order to transfer the content and how technology can be used to solve students’ and teachers’ problems in education. However, in practice there is often an imbalance between the three aspects. Technological knowledge is often seen as independent from content and pedagogical knowledge (Kirschner et al., 2008; Martens, Gulikers, & Bastiaens, 2004; Mishra & Koehler, 2006). Furthermore, content knowledge often determines the use of pedagogical knowledge and technological knowledge (Koehler & Mishra, 2005a, 2005b; Mishra & Koehler, 2006). According to the conceptual model, technological knowledge determines the use of content and pedagogical knowledge based on the problem that teachers encounter in education. The starting point thus is a problem that the teacher experiences during teaching, e.g. low study success or low student’s involvement. This problem could be solved by using an ICT-instrument that matches the content knowledge. The teacher can change the content and the transfer of content, the pedagogy, on the basis of the instrument in order to solve the problem. This way the teacher learns to look in a different way at the problem and the role of ICT herein – a paradigm shift. The application of the TPACK model is elaborated upon with the two cases below.

**Case 1**

*Second Life in the course ‘Brand Management’*

Teachers from the marketing course ‘Brand Management’ (how do I position a product/brand in the market?) at Maastricht University (UM) wanted to minimize the gap between theory and practice. Research on expertise development indicates that graduates who start working in companies have strong theoretical skills but lack practical experience to implement their theoretical skills effectively in the work-place (Arts, Gijseelaers, & Boshuizen, 2006; Tynjälä, 2008). By redesigning the marketing course from a theoretical course to an application of brand
management theory, the teachers wanted to enhance the practical learning experience. A major problem with setting up a new brand of products in practice is that it is a costly and difficult process for companies. However, when students develop and implement a new product in a virtual world, students can learn in a safe environment how to create a brand without that this is a cost-intensive investment for firms. From this perspective the teachers adapted the course in order to be able to use Second Life as an instrument to experience how to effectively launch a brand into the market, as is illustrated in Figure 2 (Belei, Noteborn, & De Ruyter, 2009, Submitted). Students had to work in small groups of 3-5 students instead of only in groups of 15 students (PK). These groups had to apply their theoretical knowledge (CK) gained during the course to a virtual company in Second Life (TCK). Thus, a variety of competitive companies (i.e., groups of students) battled for virtual customers. This was a successful imitation of a real situation where students learned the whole process of positioning a product in the market and immediately saw the results of their strategies using ICT (TPACK). It is an interesting and interactive way of learning where students have to participate and work together in teams. They also get a lot of freedom and responsibility as shown in Figure 2. The teacher is responsible for the knowledge transfer (CK) as well as the technical support and the organization and has an active role in the social, virtual process (TPK).

Figure 2 Screenshots Brand Management course in Second Life
Source: (Belei et al., 2009, Submitted)

During the redesign process of the course the teachers changed the content, based on the problem statement, and re-designed the course in a way so students will have an interactive role with a lot of responsibility (CPK). They chose for a technology that matched the student’s environment. The teachers did not just add an ICT-instrument to the course of previous years. For example, the content was adapted to phases of the process of positioning a product in the market (TCK). As a consequence, the order of the course subjects changed. Some subjects needed more attention due to the practical experience students had in Second Life. Other subjects needed less attention. The subject ‘competitors’ was for example discussed less due to the practical experiences. The tasks as well as exams were adjusted. The whole process was assessed and not only the product. This means that the group that earned the highest amount of money did not automatically have the best result. Students had to state their reasons and the results of certain strategic choices they made. This was also added to the overall assessment. The teacher had a different role during the course (TPK). The teacher re-designed the course, chose the instrument and adjusted it to the course (e.g. creation of an island in Second Life), placed all facilities, provided background information and technical support (e.g. helpdesk, lectures on how to operate in Second Life), motivated the students, watched the whole process and took part in Second Life together with the students. The teachers involved in the course stated that adequate support through carefully re-designing the course, guidance during the course and creating fun is essential for success. The content (Brand Management) was determined through the technology (Second Life) and the education. This led to a successful and motivating course for students and study success improved considerably!

What is evident in this case is that when using new technologies it is not only important to learn the technology but also to look at all three elements of the TPACK model and their interaction (Koehler & Mishra, 2005; Mishra & Koehler, 2006). Learning is a transformation process. It is about the development and understanding of complex relationships (TPACK). Only if teachers know, understand and are able to facilitate the complex relationships and processes, then ICT can be applied to education irrespective of the ICT instrument. Koehler & Mishra (2005) call this ‘Learning Technology by Design’. The teacher starts with a problem he encounters in education (in the above mentioned case, minimize the gap between theory and practice) and uses technology to probably solve it. The course is examined again on content, technology and pedagogy. The teacher is responsible for
the results and learns to see the interactions of the three aspects as well as the application of technology in order to practice the theoretical background. This approach can be compared to constructivist based pedagogies like problem-based learning (Hmelo & Silver, 2004; Norman & Schmidt, 1992) Both approaches deal with an active role of students and teachers and challenging practical experience in order to create solutions. This can be paraphrased as ‘learning-by-doing’.

Case 2
The use of frequent online tests to improve discussions in tutorials
The teachers of the course ‘Economics and Business’ at Maastricht University (UM) wanted to improve the quality of the discussions in tutorials and the practical implications. First, most students who have no background in economics have difficulties to understand the economic concepts that are discussed during the course. Second, many students have a tendency to learn the study material just before exams rather than during the course. However, problem-based learning requires that students contribute actively during the tutorials ((Dochy, Segers, Van den Bossche, & Gijbels, 2003; Van den Bossche, Segers, Gijbels, & Dochy, 2004). As a consequence, the learning effects that frequently occur when discussing economic theory during tutorials are hampered when students do not prepare for tutorials by reading the study material. Furthermore, students who did read the study materials but have difficulties to implement the economic theory in practice due to a lack of prior education might be less willing to actively contribute to discussions. Combining the two effects, the social interaction in discussion groups might be less than optimal. Based on this the course was adjusted in 2004. Students had to take weekly online exams (TCK) that tested the study material (Rienties & Woltjer, 2004) (Figure 3). Every student immediately got feedback on comprehension and application of the economic concepts (TPK), which enhances the self-efficacy of students and provides additional learning opportunities. Students could decide on the timing of the tests if only it took place before the tutorial. As a result, most students were well prepared for the tutorials thereby increasing the quality of the discussions. Less time was spent to explain the basic concepts (they were tested online) and there was more time for the practical application of the economic concepts and models (TPACK).

Figure 3 Screenshots weekly tests

Based on the problem, the teachers explicitly decided to create an attractive and interactive course where students had a lot of responsibilities. Instead of using only theoretical material from the study books, they decided to use a real case study (the oil market) for which students applied the economical concepts. Teachers chose a technology that was already available in the students’ learning environment. The course was completely redesigned. For example, less attention was paid to the theoretical concepts which led to more emphasis on practical applications in the oil market. The content was adjusted to the practical experiences. As a consequence, the order of the course topics changed. Some topics that resulted in low scores in the weekly tests were given more attention in lectures.

The role of the teacher is essential as shown in the cases mentioned above and according to the literature (Anderson et al., 2001; De Laat et al., 2007; Mazzolini & Maddison, 2003; Volman, 2005). The teacher can only successfully integrate an ICT instrument in education through active intervention and thereby gaining study success.
There is less non-verbal communication in blended learning and distance learning and the teacher has another role in
the learning process (Bromme, Jucks, & Runde, 2005; De Laat et al., 2007; Strijbos & De Laat, In press). The
function of the teacher stays the same, but his or her role changes.

**Conclusion**

In this paper we used Mishra & Koehler’s TPACK model to look at the effective use of ICT in education and the
choices the teacher has to make in this. Two cases show the practical implications.

For the successful integration of ICT in education it is important that there is a balance between the content
of the course, the used technology and the pedagogy. This means that teachers need to know the three aspects
(content, pedagogy, and technology) as well as their complex interactions. The teacher formulates and analyses an
educational problem which can be solved through the use of technology. The course will be redesigned and all three
aspects will be examined again. The teacher will become a ‘learner’ in this process and his role changes. Learning
will become a ‘two-way traffic’ (student-teacher and vice-versa). The teacher will teach the new technology by
applying it and receives another view on learning – a paradigm shift.

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Management Education and Acculturation: 
Findings from Estonia, Latvia, and Lithuania

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Abstract  There is a belief in the management literature that the internationalization of business leads to value creation that benefits both domestic and international students and faculty. This fact may help to explain why a growing number of students are opting to study abroad and experience learning in a foreign country. To this end, universities must also ensure that they continue to take a global perspective, while still being cognisant of cultural and ethical sensitivities that international students bring to the learning environment. Furthermore, these challenges can be even greater when the universities are located in the newly emerging markets of Central and Eastern Europe where management education has a limited past and an even shorter history in terms enrolling international students. This study explores these issues through the findings of empirical research conducted in the former Soviet, and recent EU ascension countries, of Estonia, Latvia, and Lithuania.

Introduction
There is strong support in the research literature that the internationalization of business will lead to value creation that benefits both domestic and international students and faculty. This fact may help to explain why a growing number of students are opting to study abroad and experience learning in a foreign country. To this end, universities must ensure that they continue to take a global perspective, while still being cognisant of cultural and ethical sensitivities that international students bring to the learning environment. Furthermore, these challenges can be even greater when the universities are located in the newly emerging markets of Central and Eastern Europe where management education has a limited past and an even shorter history in terms enrolling international students.

This research is laid out as follows. The first section looks at the literature on international education in general, and then specifically on the study of business/management for international students. Next, a case study of the findings of focus groups conducted with international students studying at three former Soviet Republics, Estonia, Latvia, and Lithuania. These findings are analyzed in the context of the extant literature in the field. The remainder of the paper provides a discussion of the findings in the context of factors that influence how an international student adjusts to location of study, as was as policy discussions about how to better manage international student retention. Implications to higher education policy makers and university administrators are also discussed.

Research Literature
Globalization and the internationalization of business
Economic globalization is more apparent today as local economies transcend borders through commerce, trade and foreign investment (Intriligator, 2004). The world’s existing economies have become more tightly bound to each other, fuelling the seemingly inevitable transformation of the world’s autarkic economies into a single cohesive global economy. This movement towards an increasingly international business landscape has many implications for both businesses and academic institutions. In order to accommodate the changing face of today’s global business environment, businesses are continually modifying their business practices and strategies in an effort to internationalize their business processes and maintain competitiveness (Elenurm, 2007). At the same time, business schools across the globe are taking on the challenge of seamlessly integrating an international dimension to an already existing curriculum in hopes of providing a better and more suitable platform for the future international managers and leaders of commerce (Elkin, Farnsworth and Templer, 2008; Townsend and Wan, 2007; Stuart, 2007).

The internationalization of universities
With the proliferation of globalization, universities and other post secondary institutions, have taken necessary steps to internationalize their institutions, particularly its business schools. The Organizationa for Economic Cooperation
and Development (OECD) defines the term “internationalization of the curriculum” as: “curricula with an international orientation in content, aimed at preparing students for performing in an international and multicultural context, and designed for domestic as well as foreign students” (IDP, 1995). More recent definitions of internationalization in education have extended this definition to include all realms of an international educational experience, such as cultural adaptation and support services offered by universities for international students (Knight, 1999; Elkin and Devjee, 2003).

In order to successfully achieve internationalization these institutions require a strategic focus on internationalization from its strategic mission; its strategic objective; and strategic planning process (Conway, Mackay, and Yorke, 1994). In a recent study using data collected for business schools and business facilities, it was discovered that universities with a complete strategic focus on internationalization were generally more internationalized with a greater desire for further internationalization compared to universities without a complete strategic focus (Elkin et al., 2008). In this study, the level of strategic focus on internationalization was established through five ‘yes or no’ questions concerning the university’s strategy and international orientation. The extent of a university’s internationalization was determined using the Elkin, Devjee model. This model consists of nine factors measured on a ten point scale including: (1) undergraduate international students; (2) postgraduate international students; (3) student exchange programs; (4) staff exchange programs; (5) staff interaction in international context/attendance at international conferences; (6) internationally focused program of study; (7) international research collaboration; (8) support for international students; and (9) international institutional links.

**International students and business education**

Elkin and Devjee (2003, p.11) propose that the internationalization of business should “aim to create values, beliefs and intellectual insights in which both domestic and international students and faculty participates and benefits equally. [Universities] should develop global perspectives, international and cultural and ethical sensitivity along with useful knowledge, skills and attitudes for the globalized market place.” Although some believe this can be achieved through education in the home country others believe that an education abroad offers more value and according to Cheney (2001. P.92) “is probably the best way to fully appreciate the issues and complexities of intercultural business communication”.

The experience of living and learning abroad teaches international students important lessons and intangible skills that cannot be replicated in a classroom setting or taught using a text book as when teaching the basic concepts and strategies of business in a global market place. The opportunity to immerse oneself entirely in the customs and culture of a foreign country and live the process of acculturation can help foreign students achieve international, cultural and ethical sensitivity (Stuart, 2007).

In an exploratory study, Yu et al. (2005) found that there are several important skills in international business management. More specifically, from a survey of 108 executives seven skills were identified as most important for international managers including: communications skills, initiative, business ethics, foreign language ability, overall learning ability, adaptive ability, and self-control (Yu, Guan, Yang and Chiao, 2005). Many of these key skills can be achieved and refined through study abroad programs. As a result, more multinational corporations are showing preference for students with international experience. Mark McKeen, the talent acquisition manager for General Motors expressed a similar attitude towards international education, saying that the experience is “distinctly an advantage for a student. The global perspective is important. It shows the student has an appreciation for different cultures and can build good, strong relationships with other people in other parts of the world” (Stuart, 2007, p.17).

This may help explain why a growing number of students are opting to study abroad and experience learning in a foreign country. Currently, international students represent a growing and formidable body in universities around the globe (Chirkov, Vansteenkiste, Tao, and Lynch, 2007). According to Lanham and Zhou (2003), the number of international students enrolled in Australian schools is reported to have increased more than twofold over the past ten years. Similarly, the “Open Doors” report by the Institute of International Education (IIE, 2001) reported a 114% increase in the number of American students enrolled in a study abroad program in the 2004-2005 school year compared to 1994-1995 (Stuart, 2007). It was also reported that the number of international students studying in the United States has increased from 343,777 in 1985-1986 to 564,766 in 2005-2006 (Stuart, 2007).

Furthermore, in 2001 it was reported that more than one-fifth of international students studying in the United States studied business and management; the most popular program amongst international students studying in the US (IIE, 2001). Similarly, in Canada for instance, at the University of Guelph international students represented 1.7% of full-time undergraduate students and 2.7% of part-time undergraduate students in 2006-2007.
respectively a 0.2% and 1.3% increase since 2000-2001. Of these international students, Guelph’s Bachelor of Commerce program is reported as having the second greatest increase in international student enrolment of full-time and part-time undergraduate students since 2000-2001. This trend of international students studying business resonates with universities across the globe and has incited a great deal of interest in the study of international students and business education.

Education and learning perspective of international business students

Current literature on international students studying business has focused on educational management objectives and improving the quality of business education for international students. Intercultural communication is described as an integral part of business education. Cheney (2001) proposes that a structured approach to experiential learning between American and international students is an effective method of teaching intercultural business communication that is beneficial to American students, international students studying in the United States and American universities. Without intercultural communication an international orientation in business education is not possible.

Furthermore, many studies have investigated the different educational needs of students from different countries and its implications on the student learning experience. In a recent exploratory study of American and Chinese management students, Parnell et al. (2003) found that Chinese students studying in the United States were more partial to participative decision-making compared to American students and Chinese students studying in Mainland China displayed a higher level of entrepreneurial orientation. Such differences in entrepreneurial and managerial orientations demonstrate the need to re-evaluate current management education approaches and develop teaching strategies that are more appropriate for a multicultural audience. Cultural differences in learning practices have also been investigated from an online learning perspective. Similar to the in-class learning environment, cultural differences were discovered to have an effect on the learning experience of international students. More specifically, international students as a whole were less satisfied with the organizational and technological issues surrounding online education.

Although many differences in learning styles have been identified as a disadvantage to international students studying outside their home country, this is not always the case. Information skills are essential for academic success, particularly in an independent learning environment. In order to determine whether international students are negatively impacted by their information skills, Varga-Atkins and Ashcroft (2004) compared the information skills of local and international undergraduate business students in the UK. Surprisingly, it was discovered that there was no significant difference between the two groups and that most students shared a negative or neutral attitude towards library and information skills. Likewise, in another study conducted by Cho, Roberts, and Roberts (2008) Chinese students in US accounting and business PhD programs were found to adapt well and succeed in a Western educational setting despite the differences between Chinese learner and Western learner characteristics.

For the most part, the existing literature on education and the learning process for international students studying business focuses on the effect and outcome of studying in or out of one’s national home culture. It identifies educational differences in teaching styles and methods across cultures; the impact of these differences on the learning experience of international students; and offers possible teaching methods that are more appropriate for an international learning environment.

A psychological perspective of international students

Aside from educational differences, international students studying business face several other non-academic challenges when studying abroad. Most notably, international students struggle with intercultural adjustment and culture shock (although this often improves with time). The stages of cross-cultural adaptation of sojourners, like international students, can be described by Lysgaard’s (1955) U curve hypothesis. According to this model, international students will experience a ‘honeymoon period’, then a period of ‘feeling bad’, followed by a period of ‘recovery’ and finally adjustment.

In order to minimize the initial culture shock experienced by international students upon first arrival and ease transition into a new academic and social environment, several universities offer international students an optional cultural orientation session. Such orientation courses provide international students with information on living in the host country and studying in a new environment as well as information of support services provided by the institution. Literature has suggested that cultural orientation courses are beneficial for new international students and can help students adjust better to a new academic and cultural environment (Kinnell, 1990). However, in an exploratory investigation of the effects of a cultural orientation program on the psychological well-being of post-
graduate students at a British university, McKinlay et al. (1996) found that students enrolled in the optional course exhibited higher levels of homesickness and psychological difficulty compared to those who did not participate. It was suggested that this could be attributed to a false sense of security cultivated by the cultural orientation course; however, this is simply speculation.

Finally, intercultural adjustment has become an interesting and important research issue with the escalation of people crossing borders for personal, academic, or job-related reasons. International students constitute a large portion of student bodies in many universities around the globe (Chirkov, Vansteenkiste, Tao, & Lynch, 2007). Hence, their adjustment in the receiving society, and their academic success, has become important topics for researchers to study.

Research Study
Business Education in the Baltic States

In terms of business/management post secondary education, as in the majority of the former Soviet Republics, business and management education in Baltic States began to emerge during the end of the Soviet period in the late 1980’s and early 1990’s. The first business school in the Baltics was the Estonian Business School in Tallinn which opened in 1988. The first in Latvia was the Riga Business School, which was established in 1991, and the first in Lithuania was Vilnius University, International School of Business, in 1989. Business education steadily grew in popularity in all three countries as it was seen as the fastest way to “move towards the West” in terms of business knowledge within the new free market economy. With the prolific growth of business education institutions, concerns as to the quality of the schools were raised, and therefore the three national governments needed to create a series of accreditation programs and procedures (Latvian Council of Higher Education, 2006).

Although higher education in the Baltics States was originally the sole domain of public institutions, as noted by Vanegs and Hanson (2005) there was need for more practical courses, and also shorter courses which they believed would be better taught by entrepreneurs and practicing professionals rather than professors (this could also be attributed to the fact that the public institutions did not have an adequate supply of professors versed in the free market business model).

International Students at Baltic Universities – Focus Group Study

For this study, the purpose of the focus group sessions was two-fold. The first was to highlight the thoughts and experiences of international students in general, and second to explore the experiences of international students enrolled in a business/management program. The expectation was that the findings of the focus group sessions would aid in the collection of descriptions of, and insight into, student acculturation, future orientation, and country/city acculturation.

As described by Stewart, and Shamdasani (1990), information gained from focus groups improves understanding of the phenomena of interest, particularly individual behaviour. Furthermore, focus groups within the exploratory and development stages of research are effective in uncovering phenomena of interest where little information is previously known (Morgan, 1997; Sudman & Blair, 1999; Zikmund, 2003). A number of frameworks for conducting focus groups have been discussed in the literature (Stewart & Shamdasani, 1990; Krueger, 1994; Chrzanowska, 2002). For this research the focus group process followed the methodology recommended by Carson et al. (2001).

The majority of the topics covered in the focus group sessions were centred on the concept of acculturation. Acculturation in this context is derived from the original anthropological definition of changes that may occur in “either or both groups” from different cultures when they come into contact (Redfield, Linton, and Herskovits, 1936, p. 149). The questions also introduced culture and location specific inferences (activities, friendship, personal and academic experiences) that were hypothesised to have an influence on acculturation, and more specifically to education in the Baltic States, the potential impact of economic and social change (Inglehart, 1997). Finally, the sessions were structured to allow for the uncovering of unknown experiences, and thus be phenomenological in nature (Dabholkar et al. 1996). The author(s) acted as session moderators, and followed a general protocol, including a list of open and closed questions (see Appendix 1) that guided the sessions (Zikmund, 2003).

There were a total of ten sessions, two in Estonia (Tartu University), four in Latvia (Stockholm School of Economics, Riga), and four in Lithuania (ISM University of Management and Economics). There were as total of forty-five participants, twenty-three female, and twenty-two male international students. How countries of the students’ included Austria, Bulgaria, Estonia, France, Germany, Latvia, Lithuania, and Slovenia. The sessions were audio recorded and then transcribed. The analysis process involved the review of participant quotations in order to interpret the indicators of being an international student at the respective university. Furthermore, although the focus
group information presented here is detailed, it has been included as it is the first known empirical investigation into
the issue of international students studying business/management in this context. Comments judged to be relevant to
each of the four factors of (1) University/program choice (2) City/Country experiences (3) Acculturation; (4) Future
Orientation; are reviewed in turn.

There was a general consensus in the answers to questions on university/program choice, but it was not
universal. The majority of the comments, not surprisingly, focused on the quality of the program specifically, but
additional comments linked the choice of the program to the fact it was not too distance from one’s homeland;

“I want to get the best education that we could get in the area. But I didn’t want to move from the Baltic because I
plan to live here in my life. I didn’t want to emigrate. So this is a good middle point between moving somewhere
else and staying at home and it offers a good education.” (year 2 female)

This finding was also echoed in comments such as;

“At first I was reluctant to go further abroad, and thought of what I had heard as the best school.
And so I came here, and the main thing is that Latvia is abroad, and I thought ‘oh I am going
somewhere else’. But it’s still not that much abroad. I mean, it’s beyond a journey from home.”
(year 3 male)

There appeared to be a clear focus on the choice to study at a specific university for the program itself, but there was
also a conscious belief that an additional benefit, such as exposure to some degree of “foreigness” would also be
achieved. With respect to studying in the specific city/country, one of the most informative questions centred on the
most exciting/disappointing experiences of living in a foreign country;

“Um, well of course it’s exciting because for most of us it’s the beginning of an independent life.
It’s a new city; it’s the biggest city in the Baltic’s so you feel like you are living in the capital but at
the same time, coming from Estonia it was a bit difficult to come because of the language.
Because I am very bad at Russian and I don’t speak Latvian at all. Uh so it causes sometimes
some misunderstandings and you get…get used to adjusting very much. I try to read body
language and things like that but still at the same time it makes me feel uncomfortable like an
immigrant. (year 2, female)

This positive aspect of living independently may be extended from studying away from home at university in
general, as it highlights additional challenges of being an international student. It was of interest to see that this
greater challenge was still viewed as a positive experience. In terms of disappointing experiences, a common thread
seemed to be that although you were living in a foreign city/country, you could, and often did, spend most of your
time in the student “bubble”. This fact limited the extent that you really felt yourself being foreign;

“For me the most disappointing thing is that although we have great people in Riga but after two
months maybe I get to know everybody and I’d like to have new acquaintances because we don’t
have so many students in here. So I understood there are no parties for the Latvian University
students that I’m just going to the bar and there are no like those University bars there seem to be.
I am not getting new acquaintances I am just getting to know my classmates better.” (year 2,
female)

The questions on acculturation demonstrated a lack of focus on being “international” as it related to be a student;

“At school I think its one thing, uh in a sense, its international students, I understand. So uh our
school is kind of special in that sense. We don’t feel like international students, I don’t feel like um
treated on a different basis than students from Latvia or Lithuania. Therefore, I don’t see any
academic difficulty uh regarding the fact that I am international student. So I mean, I don’t really
feel like an international student in that sense”. (year 3, male)

Additional acculturation questions elicited some interesting comments, particularly as they related to discrimination.
The general belief seemed to be that acts that may be considered discriminatory, such as paying higher fees for taxis
and apartments, were because they were international students, but that if there were, then they could afford to pay more;

“As an international student you think that um for example paying for taxes isn’t fair. It will cost more if you don’t speak either Russian or Latvian…that was the problem (year 2, female)

“Ah there was the taxi thing…if you ask in English they simply just charge you on triple tariff or something…because you are a foreigner…you should earn more and you are able to pay more” (year 2 male).

The students do seem to have been able to work around these issues, as one student noted that they just ask one of their local colleagues to order the taxi for them. In general the position appeared to be that from an academic standpoint, due to the fact that the program was taught in English, that there was little in the way of difficulties in terms of school work. The final area of interest, future orientation, demonstrated an acute sense that these students had spent some time on this thought. There was though, a number of the comments that indicated that the students had a desire to continue their academic careers but not unlike many undergraduate students, the possibilities were of greatest interest as opposed to the specifics;

“maybe I will go to try and get the master degree, and uh after the graduation, I am not sure about this”. (year 2, male)

“I would like to get the master degree, but I don’t know if I will do it, like straight after graduation or make, actually make a couple of years break, don’t know yet”. (year 2, female)

“Yeah, I am also thinking about the master degree, but uh if I know exactly what I want to study, then I will start straight away. But probably I won’t yet. So I will work maybe in different institutes to find out what is best for me, then I will take a master degree”. (year 2, male)

“I think that I will try to work for a year or two, I don’t know which field exactly but something related to economics. And then maybe after some work experience and getting to know the business and stuff I would try and continue graduate studies somewhere”. (year 2, male)

A secondary question about the students’ future orientation related to the expectation of remaining in the country of study after graduation or returning to one’s homeland. This question was assumed to be of interest to academic administrators and education policy makers, particularly in countries such as Estonia, Latvia, and Lithuania, which have stated aims of using higher education to build the future economy;

“I probably, work after studies but I’m not actually quite sure anymore. For a while I was really thinking about like to go somewhere away for a while but uh lately being already here for two years, I’m really homesick but I kind of start to look at Estonia with another view like have another look at it. I mean before I wasn’t really fond of my hometown, but now the fact that it’s in Estonia this home feeling has become so much stronger. Being away for awhile, so even though I think last year I had a really strong plan to go away for I don’t know a year or two or two or three years after graduating but now I think after I graduate I want to be back home for a while”. (year 2, female)

“My vision is that I will either reside somewhere in the Baltic or go somewhere in Europe because the time when you are young is the only time when you can explore, feeling up any serious commitment”. (year 2, male)

“I will definitely go somewhere abroad, uh and to work, maybe for a couple of years I can stay abroad, but later on I plan to come back”. (year 2, female)

In brief, the purpose and findings of the focus groups was to provide an initial step in supporting the need for both accepting international students into a business/management program, and also providing some insight as to what the
long term expectations/benefits will be for the host institution and country. These comments not surprisingly tend to support the position that the quality of the business/management program is what will drive the top students to one’s institution, but there appears to be little support, that in this case, the institution will have any significant impact on future residency of its students. This finding will have relevance to higher education policy makers in terms of predicting the long term benefits of encouraging/discouraging the growth of the international student body. Furthermore, these findings will be of interest in terms of comparative findings to similar studies in non-emerging markets.

Conclusions
The findings of this research, although preliminary in nature, and although there were multiple focus group sessions, will be enhanced by future studies of this kind. It is suggested that by limiting the study to international students, studying in one discipline, helps to provide a greater understanding of the specific issues that international business/management students face, and additional studies in additional countries will help to identify those similarities and differences that are country versus program specific.

Based on the findings of this study, it appears that the adjustment of international students to the receiving society, and their intention to stay or return to their home country, are important issues for many researchers. It would seem that based on the focus group findings, that an adjustment at initial entry can be met with great difficulties followed by better coping over time (i.e. the non-trivial differences in comments by the third versus the second year students). Furthermore, cultural and individual factors, as well as various factors originated from the receiving society, all have an impact on the international students’ adjustment and their intention to stay or return. Future studies could also examine more extreme differences in host versus visiting culture, as well as comparing undergraduate versus graduate business/management students.

Finally, these findings will be of value to both administrators at institutes of higher education, but also governmental and policy makers. Depending upon the aim of increasing international students in one’s universities (i.e. funding, future employment etc.), then the findings of this study indicate that there is a greater need to provide ongoing programs for acculturation and integration. Furthermore, if the aim is to better prepare domestic students for an increasingly global marketplace, then there are opportunities to learn from international students by encouraging greater integration in both inside and outside classroom activities.

References


Appendix 1 – Selected Focus Group Questions

(1) Background Questions
   (a) Please share with us the reasons why you decided to attend (University Name) and study the program that you are in.
   (b) Of the reasons you mentioned, what would you consider to be the most important/main reason you enrolled in this program?

(2) City/Country Questions
   (c) Could you please share with us some of your most exciting/disappointing experiences living in (host City/Country)?
   (d) What types of day to day activities have you found to be the most similar/different from your home country? What were your expectations in terms of these types of activities prior to coming to (host City/Country)?

(3) Acculturation Questions
   (e) Could you share with us some experiences that you have had while studying at (University Name) that were different that what you have expected if you were studying business/management/economics in your home country?
   (f) What types of leisure activities have you experienced in (host City/Country)? How would these activities compare/contrast with leisure activities you would participate in, in your home country?
   (g) Could you list your top five academic or non-academic difficulties as an international student?
   (h) During your stay here as an international student, did you feel lonely or experienced any hassles/discrimination?

(4) Future Orientation Questions
   (i) What are your plans when you graduate from (University Name)?
   (j) How do your future plans compare/contrast to what your plans were prior to arriving in (host City/Country)?
   (k) What are the expectations of your family/friends in terms of your studying business/management/economics at (University Name)?
The Influence of Academic and Social Integration on Academic Performance for International and Local students, a cross-institutional comparison

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Abstract: A common belief among educators is that international students are insufficiently academically and socially adjusted to higher education. Recent research has found a mixed picture on whether international students underperform in academic and social integration and academic performance. Therefore, Morrison et al. (2005) argue that research should extend its focus to understanding the underlying reasons for these performance differences of international versus local students. In a cross-institutional comparison among 958 students of five business schools in the Netherlands, we investigated the differences in academic performance amongst local and international students by focussing on academic and social integration. Students’ academic integration was measured with the Students’ adaptation to college questionnaire (SACQ), while students’ social integration was measured with a newly developed and validated questionnaire, the social integration questionnaire (SIQ, 4 factors, 15 items). The results indicated that students with a non-Western background are less integrated than Western students, have considerably lower academic and social integration scores and have (marginally) lower GPA and ECTS scores.

Introduction

An increasing number of students choose to study at a university away from their home country (EUROSTAT, s.d.). Next to the enriched, more international atmosphere at the host universities (Eringa & Huei-Ling, 2009; Van der Wende, 2003), there are some reservations among educators regarding the academic and social integration of international students. A common assumption in higher education is that academic integration, that is the extent to which students adapt to the academic way-of-life (Tinto, 1975), of international students is not well aligned with the requirements of higher educational institutes (Asmar, 2005; Barrie, 2007; Morrison, Merrick, Higgs, & Le Métais, 2005). Recent research has found a mixed picture on whether international students underperform in academic integration and academic performance. Therefore, Morrison et al. (2005) argue that research should extend its focus on comparisons in performance of international versus local students to the underlying reasons for these differences.

According to Tinto (1975, 1998), students not only need to persist at university in order to graduate but they also need to participate in the student culture, both within and outside the immediate context of the learning environment. Severiens and Wolff (2008) found that students who feel at home, who are well connected to fellow-students and teachers and who take part in extra-curricular activities are more likely to graduate. In addition, Wilcox et al. (2005) found that social support by family and friends (i.e. social networks of students) has a positive influence on the study-success of first-year students. Having a sufficient number of friends, sharing accommodation with other students as well as contacts with the university staff can influence social integration. We define social integration as the extent to which students adapt to the social way-of-life at university. Recently, researchers are broadening the focus on academic integration and academic performance to the social integration of students (e.g. Meeuwisse, Severiens, & Born, 2010; Severiens & Wolff, 2008; Wilcox et al., 2005; Yazedian & Toews, 2006). The goal of this paper is first to identify whether academic and social integration differs for local and international students. Second, we will assess whether differences in academic and social integration between local and international students also has an impact on study-success (GPA, ECTS).
**Academic Integration**

In line with the model of Tinto’s interactionist model (Tinto, 1998), Baker and Siryk (1999) have assessed that academic integration has a large influence on study performance. Baker and Siryk (1999) distinguish four concepts in academic integration, namely academic adjustment, social adjustment, personal and emotional adjustment and attachment. Academic adjustment refers to the degree of a student’s success in coping with various educational demands such as motivation, application, performance and satisfaction with the academic environment. Social adjustment on the other hand describes how well students deal with the interpersonal-societal demands of a study, such as working in groups. The scale personal and emotional adjustment indicates the psychological and physical level of distress experienced while adapting to the academic way-of-life. Finally, attachment reflects the degree of commitment to the educational-institutional goals. In a large number of studies in U.S. colleges, the four concepts of academic adjustment are positively related with study progress and study performance (Baker & Siryk, 1999).

**Social Integration**

Current research indicates that institutes and the social networks of students have a large influence on how first-year students adjust (Christie, Munro, & Fisher, 2004; Severiens & Wolff, 2008; Tinto, 1998; Wilcox et al., 2005). In the context of international students, based upon a literature review we have identified four factors, namely: perception of the faculty by the social network of students; social support by family and friends; social life; and ethnic background.

The perception of faculty, that is the perceived esteem of the faculty by family, friends, the general public and future employers, influences the social integration of students (Gloria, Castellanos, Lopez, & Rosales, 2005; Thomas, 2002). For example Ozga and Sukhnandan (1998) found that non-completing students had a lower compatibility with the institute, which was in part caused by less compatible social networks. Higher Educational Institutes are increasingly aware of impacts of ranking lists such as those published in the Financial Times on the choices that students make when selecting an educational programme. Therefore, HEI spend considerable effort in providing non-academic facilities to students (e.g. campus, ICT-facilities, social life, cultural programmes) in order to differentiate them from other institutes (Bok, 2003; Thomas, 2002). A HEI with a well-perceived reputation by the social network of the student is expected to have a positive influence on the persistence of study.

Wilcox et al. (2005) found that social support by family and friends has a strong influence on study-success of first-year students. In general, the role of the family on the attitudes and motivation of students has been consistently found in educational psychology (Attewell, Lavin, Domina, & Levey, 2006; Cokley, Bernard, Cunningham, & Motoike, 2001; Ozga & Sukhnandan, 1998). Students who drop out of higher education often state that social support networks provide insufficient support to continue (Christie et al., 2004; Meeuwisse et al., 2010; Ozga & Sukhnandan, 1998).

The social life outside of the academic environment has a strong influence on academic integration. Having a sufficient number of friends, sharing accommodation with other students, being member of a study association, student fraternity or sports club can influence social integration and academic performance (Bok, 2003; Ozga & Sukhnandan, 1998; Severiens & Wolff, 2008). This allows students to become part of a social life that is closely attached to the university setting (Tinto, 1998).

Finally, research on cross-cultural differences has highlighted that both national and ethnic identity (Asmar, 2005; Eringa & Huei-Ling, 2009; Phinney, 1990; Yazedjian & Toews, 2006) influence how students learn in social networks. For example, Skyrme (2007) found that Chinese students who entered at a New Zealand university had significant transitional problems. Berry (1999, p. 40) defines the transitional challenges of students from two different cultures as acculturation, which is “the process of cultural change that results when two (or more) cultural groups come into contact with each other; the changes occur in both groups, but usually one (the dominant group) changes less than the other(s)”. When international students and local students work and learn together, both have to make an effort to acculturate in order to be able to effectively work together. However, in our own research we found that German students differed significantly with respect to learning styles and study performance to Dutch students (Tempelaar, Rienties, & Gijselaers, 2007). In addition, we found that local and international students live in separate social groups and therefore lead different social lives (Rienties, Grohnert, Niemantsverdriet, Kommers, & Nijhuis, 2010).

Finally, research on drop-out and retention indicates that financial constraints can have significant impact of study progress (Thomas, 2002). For example, 45% of the cohort investigated by Thomas (2002) indicated to have substantial financial concerns. Meeuwisse et al. (2010) found that non-completers from low social-economic backgrounds were more affected by problems in their home or personal situation, which is directly related to their financial situation and financial support by their social network. Based upon the academic and social integration
Factors identified above, the following research questions will be addressed in order to assess whether international students’ academic and social integration differs from local students and whether these differences have an influence on study-outcomes:

- To what extent is academic and social integration related to study performance?
- To what extent is the relationship of academic and social integration with study performance different for international students?

**Methods**

**Setting and participants**

In this research, academic and social integration will be compared among local and international students using a dataset that was composed from five business schools who offer business and economics programmes to first-year bachelor students in the Netherlands. The integrated questionnaire was distributed to 1887 students after 6-8 months of study among five Dutch business schools. Of the 1887 participant contacted, 958 completed the questionnaire, a response rate of 50.8%. In particular programs that have a significant portion of international and local students were taken into account, in order to be able to make direct comparisons on both the institute and the aggregate level. In total 79 nationalities and 129 ethnic identities were present in the database. Respondents were assured that their individual responses and particular institutions would not be identified in any published account of the results.

**Measures**

*Student Adaptation to College Questionnaire.* Students’ academic integration was measured by the Student Adaptation to College Questionnaire (Baker & Siryk, 1999), which consists of four scales: Academic adjustment (e.g. “I know why I am at this institute and what I want out of it”, 24 items), Social adjustment (e.g. “I am meeting as many people and making as many friends as I would like at the institute”, 20 items), Personal-emotional adjustment (e.g. “I have been feeling tense and nervous lately”, 15 items) and Attachment (“I expect to stay at this university for my master degree”, 15 items). Cronbach’s alphas were respectively .83, .84, .84, .85. This questionnaire has been used and validated in various other studies in the U.S. (for overview, see Baker & Siryk, 1999). Furthermore, applications of the SACQ in Belgium and the Netherlands have confirmed that the questionnaire is useful in an European context (Beyers & Goossens, 2002; Niculescu, Nijhuis, & Gijselaers, 2009).

*Student social Integration Questionnaire.* Students’ social integration was measured by the Social Integration Questionnaire (SIQ, Rienties et al., 2010), which consists of 18 items, divided in five constructs. The perception of the faculty scale measures the perception of the faculty of the student’s environment (e.g. “I think that my acquaintances/friends have a good perception/image of the faculty”, 3 items). The study support scale measures the support of the student’s social network, incorporating family and friends (e.g. “My family encourages me to stay in the faculty”, 3 items). The student’s satisfaction with social life scale consists of six items (e.g. “Financial aid is important for my continuation at the university”). Finally, the intercultural social life is measured, assessing to which degree students have contact with local students, students of the largest foreign groups (German or Chinese students) and with other international students (e.g. “Outside class I have regular social contacts with Dutch students”) (3 items). The intensity of intercultural social life is measured by the mean scores of these three items. The direction of the intercultural social life is measured by two dummy variables (primarily Dutch network, primarily German network). Except for the latter, the other four scales of the social integration questionnaire were validated in two steps. Cronbach’s alphas were respectively .77, .87, .79, and .76. Second, in order to test the structure of the four components of the social integration questionnaire that was found in the exploratory factor analysis, confirmatory factor analysis (CFA) was used on another dataset, collected in the other four institutions. The hypothesised model that was found in the exploratory factor analysis had four factors corresponding to four different scales. The items for each scale function as indicators for the respective factor.

*Study-Success.* The study-success of the participating students was assessed by taking into account the number of ECTS credits (a regular business track contains 60 ECTS in one year) obtained after one year of study as well as the student’s average grade after one year (GPA). In total 91% of the ID-numbers could be linked with the study-success data of the administrative systems of the five business schools.

*Demographic data:* Gender and Ethnicity. The ethnic identity was measured in line with previous research (Rienties et al., 2010) by four open questions, namely mother’s mother tongue, father’s mother tongue, own mother tongue.
...and official citizenship(s). Therefore, in order to prevent a fragmented approach of comparing a limited amount of students within each ethnic category, students were categorized according to the “degree of Westernness”. We assumed that the more Western influences a student had, the easier it would be for the student to adjust to the Dutch culture. Thus, in each of the four categories a distinction was made between Western cultures (European Union, USA, Canada, Australia, New Zealand) and non-Western cultures. Consequently, four groups (Dutch, Western, mixed-Western, non-Western) were distinguished. Dutch students can thus be compared to students that had a completely Western background (e.g. German student with German parents), a mixed-Western background (e.g. a German student with Turkish parents who was born and raised in Germany), or a purely non-Western background (e.g. Chinese students with Chinese parents).

**Method of data analysis**

Firstly, descriptives of the different variables in the study were calculated. Secondly, correlation analysis explored the relation between the SACQ components, the SIQ components and the students’ grades and ECTS. Thirdly, Analysis of Variance (ANOVA) explored differences between the different ethnicities. Fourthly, regression analyses were conducted to identify whether the students’ demographic information, the SACQ and the SIQ components predict students’ grades and ECTS.

Preliminary analyses of the data involved inspection of normality and homogeneity of variance assumptions. Normal plots, box-plots and the calculation of skewness and kurtosis were used to check the normality of distribution. In order to test the equality of group variances the Levene’s statistics were calculated. To distinguish between “practically” significant results and results being “statistically” significant, the effect sizes are reported and the results of the statistical analyses were named significantly by a p value of <.05.

**Results**

**Preliminary results**

*Table 1 Measures: Questionnaires, Item examples, Cronbach's alphas and descriptive statistics*

<table>
<thead>
<tr>
<th>Scale</th>
<th>N</th>
<th>Example item</th>
<th>M</th>
<th>SD</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Adaptation to College Questionnaire (Baker &amp; Siryk, 1999)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic adjustment</td>
<td>24</td>
<td>I know why I am at this institute and what I want out of it</td>
<td>143.98</td>
<td>20.75</td>
<td>.83</td>
</tr>
<tr>
<td>Social adjustment</td>
<td>20</td>
<td>I am meeting as many people and making as many friends as I would like at the institute</td>
<td>124.49</td>
<td>19.69</td>
<td>.84</td>
</tr>
<tr>
<td>Personal-emotional adjustment</td>
<td>15</td>
<td>have been feeling tense and nervous lately</td>
<td>91.19</td>
<td>18.35</td>
<td>.84</td>
</tr>
<tr>
<td>Attachment</td>
<td>15</td>
<td>I expect to stay at this university for my master degree</td>
<td>104.53</td>
<td>15.84</td>
<td>.85</td>
</tr>
<tr>
<td><strong>Student Social Integration Questionnaire (Rienties et al., 2010)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perception faculty</td>
<td>3</td>
<td>I think that my acquaintances/friends have a good perception/image of the faculty</td>
<td>11.39</td>
<td>2.13</td>
<td>.76</td>
</tr>
<tr>
<td>Study support</td>
<td>3</td>
<td>My family encourages me to stay in the faculty</td>
<td>12.07</td>
<td>2.39</td>
<td>.87</td>
</tr>
<tr>
<td>Student's satisfaction with social life</td>
<td>6</td>
<td>I am satisfied with my social life outside of class</td>
<td>33.73</td>
<td>6.73</td>
<td>.79</td>
</tr>
<tr>
<td>Financial support</td>
<td>3</td>
<td>Financial aid is important for my continuation at the university</td>
<td>7.89</td>
<td>3.50</td>
<td>.76</td>
</tr>
<tr>
<td>Intercultural social life (intensity)</td>
<td>3</td>
<td>Outside class I have regular social contacts with Dutch students</td>
<td>3.19</td>
<td>.76</td>
<td></td>
</tr>
<tr>
<td>ECTS</td>
<td></td>
<td></td>
<td>53.81</td>
<td>10.77</td>
<td></td>
</tr>
<tr>
<td>GPA</td>
<td></td>
<td></td>
<td>6.84</td>
<td>.92</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 shows the means and standard deviations of the four academic integration components, the five social integration components and study performance (GPA and ECTS). Table 2 shows the results for the correlation analysis and indicates that the four subscales of the SACQ have high significantly positive correlations (Baker &
Siryk, 1999; Beyers & Goossens, 2002). Next, the social integration components are significantly positive correlated, except for the financial support scale that shows a significantly negative correlation with perception of the faculty scale. Furthermore, there is a significantly positive correlation between the SACQ scales and the social integration scales, again except for financial support. Study support and the intercultural social life (intensity) also do not correlate significantly with the personal-emotional adjustment scale. Finally, the average grade after one year (GPA) is significantly positively correlated with academic adjustment, personal-emotional adjustment, attachment and the perception of the faculty, while the average number of credits obtained after one year (ECTS) only correlates with academic adjustment and attachment. The students’ GPA and ECTS do not correlate significantly with the social integration scales.

Table 2 Correlation analysis of the different variables involved in the study

<table>
<thead>
<tr>
<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Academic adjustment</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Social adjustment</td>
<td>.51**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Personal-emotional adjustment</td>
<td>.51**</td>
<td>.43**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Attachment</td>
<td>.63**</td>
<td>.83**</td>
<td>.45**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Perception faculty</td>
<td>.21**</td>
<td>.23**</td>
<td>.09**</td>
<td>.29**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Study support</td>
<td>.15**</td>
<td>.18**</td>
<td>.06</td>
<td>.22**</td>
<td>.29**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Intercultural social life</td>
<td>.14**</td>
<td>.28**</td>
<td>.03</td>
<td>.22**</td>
<td>.18**</td>
<td>.07**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Students’ satisfaction with social life</td>
<td>.39**</td>
<td>.86**</td>
<td>.31**</td>
<td>.68**</td>
<td>.23**</td>
<td>.16**</td>
<td>.28**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Financial support</td>
<td>.05</td>
<td>.03</td>
<td>.05</td>
<td>.03</td>
<td>.02</td>
<td>.04</td>
<td>.03</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. GPA</td>
<td>.21**</td>
<td>.04</td>
<td>.05</td>
<td>.10**</td>
<td>.06</td>
<td>.03</td>
<td>.03</td>
<td>.01</td>
<td>.05</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>11. ECTS</td>
<td>.22**</td>
<td>.07</td>
<td>.08**</td>
<td>.15**</td>
<td>.09**</td>
<td>.02</td>
<td>.02</td>
<td>.03</td>
<td>.04</td>
<td>.28**</td>
<td>1</td>
</tr>
</tbody>
</table>

*p < .05 . **p < .01. ***p < .001.

ANOVA

In order to gain a more detailed perspective of the different (sub)groups of international students, Table 3 illustrate the academic and social integration of Dutch, Western, mixed Western and non-Western students. In comparison to Dutch students, Western students score higher on all scales of academic integration with the exception of personal/emotional adjustment. In addition, mixed-Western student score significantly higher on all dimensions of academic integration in comparison to both Dutch and Western students. However, non-Western students score significantly lower on all elements of academic integration with the exception of academic adjustment. Mixed-Western students score highest on support by family and friends and social life. Finally, if we look at study-success, Western students attain higher GPA and numbers of ECTS then Mixed-Western, Dutch and non-Western students. Non-Western students score significantly lower on both GPA and ECTS than Western students, while this difference disappears when we compare non-Western with Dutch or mixed-Western students.
Table 3 Comparison of academic and social integration

<table>
<thead>
<tr>
<th></th>
<th>Dutch M</th>
<th>Dutch SD</th>
<th>Western M</th>
<th>Western SD</th>
<th>Mixed-Western M</th>
<th>Mixed-Western SD</th>
<th>Non-Western M</th>
<th>Non-Western SD</th>
<th>F-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic adjustment</td>
<td>141.57</td>
<td>20.03</td>
<td>144.15</td>
<td>20.13</td>
<td>150.07</td>
<td>22.96</td>
<td>144.04</td>
<td>22.81</td>
<td>3.503**</td>
</tr>
<tr>
<td>Social adjustment</td>
<td>123.46</td>
<td>17.19</td>
<td>126.08</td>
<td>20.08</td>
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<td>16.92</td>
<td>113.25</td>
<td>22.88</td>
<td>13.539**</td>
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<td>Personal/Emotional adjustment</td>
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<td>17.57</td>
<td>89.78</td>
<td>18.49</td>
<td>92.14</td>
<td>18.09</td>
<td>84.89</td>
<td>17.57</td>
<td>8.155**</td>
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<tr>
<td>Attachment</td>
<td>103.85</td>
<td>14.50</td>
<td>106.34</td>
<td>15.45</td>
<td>107.10</td>
<td>15.95</td>
<td>94.52</td>
<td>17.80</td>
<td>14.826**</td>
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<tr>
<td>Perception of institute</td>
<td>10.96</td>
<td>2.04</td>
<td>11.80</td>
<td>2.14</td>
<td>10.99</td>
<td>2.07</td>
<td>10.91</td>
<td>1.97</td>
<td>12.892**</td>
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<td>Study Support</td>
<td>12.24</td>
<td>2.19</td>
<td>12.04</td>
<td>2.41</td>
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<td>2.69</td>
<td>11.55</td>
<td>2.47</td>
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<td>Student's satisfaction with social life</td>
<td>33.43</td>
<td>6.06</td>
<td>33.93</td>
<td>6.85</td>
<td>36.59</td>
<td>5.72</td>
<td>30.74</td>
<td>7.71</td>
<td>10.201**</td>
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<td>Financial support</td>
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<td>3.38</td>
<td>7.24</td>
<td>3.42</td>
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<td>7.51</td>
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<td>15.324**</td>
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<td>GPA</td>
<td>6.63</td>
<td>0.97</td>
<td>7.01</td>
<td>0.94</td>
<td>6.82</td>
<td>0.71</td>
<td>6.66</td>
<td>0.64</td>
<td>10.905**</td>
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<tr>
<td>ECTS</td>
<td>52.59</td>
<td>11.18</td>
<td>55.65</td>
<td>9.12</td>
<td>51.62</td>
<td>12.35</td>
<td>49.69</td>
<td>13.89</td>
<td>10.598**</td>
</tr>
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</table>

ANOVA F-Test for Dutch students (n=288), Western students (n=479), mixed-Western students (n=85) and non-Western students (n=90).

**Coefficient is significant at the 0.01 level (2-tailed).

*Coefficient is significant at the 0.05 level (2-tailed).

† Coefficient is significant at the 0.10 level (2-tailed).

In order to track the possible influence of gender, another ANOVA was executed with all other variables (the SACQ components, the SIQ components and students’ GPA and ECTS) as dependent variables. It was found that male students on average score higher on the scale personal-emotional adjustment in contrast to female students (p < .001), while female students collect more ECTS during one academic year than male students (p < .05). Therefore, we controlled for gender and ethnicity in the regression analysis.

Discussion

In this article, we investigated how academic and social integration is related to study-performance for international students and local students at five business schools in the Netherlands. A common assumption among educators is that academic and social integration of international students, that is the extent to which students adapt to the academic and social way of life, is not well-aligned with the requirements of higher education. In order to gain a perspective on this (perceived) lack of adjustment, this study tried to identify the underlying reasons for students' successful or unsuccessful integration and academic performance, as suggested by Christie et al. (2004). As a new feature of this study, student retention was explained by both academic integration (Baker & Siryk, 1999; Beyers & Goossens, 2002; Tinto, 1975, 1998) and social integration (Severiens & Wolff, 2008; Tinto, 1998; Wilcox et al., 2005). Finally, by extending the focus to five business schools across the Netherlands, we were able to compare academic and social integration among 958 students, which strengthens our findings in comparison to a single-institute analysis or a comparison among various disciplines of study.

Our first main finding is that study-success is primarily related to academic integration. Correlation analyses indicate that the average grade after one year is significantly positively correlated with three of the four academic integration scales of Baker and Siryk (1999), namely academic adjustment, personal-emotional adjustment and attachment. For the social integration measures, only the perception of the faculty by people in the social network of the student is positively correlated with ECTS.

Our second important finding is that contrary to popular beliefs the academic and social integration of international students was not lower than local students per se. International students did score lower on personal and emotional adjustment than local students, but this can be explained by the fact that adapting to a new culture takes time and might cause stress (Asmar, 2005; Skyrme, 2007). Given that the questionnaire was distributed after six to seven months after the start of the students’ academic study, one might expect that international students were not yet fully personally and emotionally adjusted. With time, one might expect that the emotional and personal adjustment problems of international students will disappear.
A third major finding is that the successfulness of academic and social integration is partly related to the “degree of Westernness” of international students. In general, Western students and Mixed Western students performed equal or even better than Dutch students on academic integration and study-performance. This is an positive and optimistic finding for all educators who are concerned with the impact of increased internationalisation (Van der Wende, 2003) and for those who conduct research among ethnic minorities and find that mixed Western students are more likely to drop-out of higher education (Meeuwisse et al., 2010; Severiens & Wolff, 2008).

Students from local (Dutch) and non-Western backgrounds obtained lower GPA and ECTS in comparison to Western students. The fact that Dutch students underperform relative to Western students has been found before (Rienties et al., 2010; Tempelaar, Rienties, & Gijselaers, 2006; Tempelaar et al., 2007). Western students who study in the Netherlands are in general one or two years older than Dutch students and make a conscious decision to study abroad. As a result, Western students’ motivation and learning attitude are significantly more adjusted to the demand of higher education than those of Dutch students (Tempelaar et al., 2006, 2007). In contrast, the lower study-performance of non-Western students in our sample has also been found before (Morrison et al., 2005).

Limitations and future research
A first limitation of this research is that we used self-reported scores of students on academic and social integration. Besides the known issues with using self-reported scores, groups or persons who are “at risk” might not have returned the questionnaire or would have filled in the questionnaire in a socially desirable manner. By distributing the internationally validated questionnaires in class on paper, we tried to limit this selection bias. In addition, we indicated that each student would be given feedback on their academic and social integration scores, hoping to encourage students to report true scores. A second limitation of this research is that the questionnaire was distributed after six to seven months, which might (possibly) prevent us to incorporate (international) students who had already dropped out. Nonetheless, previous research (Baker & Siryk, 1999; Beyers & Goossens, 2002; Gloria et al., 2005; Niculescu et al., 2009; Severiens & Wolff, 2008) has consistently found that low scores on academic and/or social integration leads to poor academic performance of students. In addition, the primary focus in this article was to assess how international students perceive the academic and social worlds in which they study, in line with recommendations of Christie et al. (2004). Finally, although correlation analyses indicate a relation between academic and social integration and study-success, subsequent regression analyses need to be taken into consideration in order to determine the causality of relations.

Given the above limitations, we aim to do a second measurement of the questionnaire among new first-year students in March/April 2010 and extend the total sample of our database. In particular, by extending the database for non-Western students we will be able to compare students from different non-Western cultural backgrounds. Furthermore, in-depth focus group discussions will be held in order to obtain a more profound understanding of the underlying dynamics of academic and social integration in the near future. Finally, in the Acculturation project nine online acculturation courses among nine higher educational institutes in the Netherlands were implemented in spring-autumn 2009 to a large number of international students in a range of disciplines. By offering these courses, we focussed on getting international students acquainted with the Netherlands and the specific issues at the institute. In this way, we hope to facilitate in particular non-Western students who have according to our findings the largest adjustment problems in our business schools.

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References


Internationalisation of Study Programs in Austrian Higher Education

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Abstract: In the last few years, the implementation of bachelor’s and master’s programs in Austria to replace the previous degree programs has caused various discussions and the enormous student protests at the end of 2009. The rigid structure of the bachelor’s programs as well as the insufficient acceptance of the bachelor’s degree itself, have led to increasing dissatisfaction among students. To increase the quality of the new degrees several measures are necessary. Based on the results of two recent studies in Austria positive and negative factors influencing the acceptance of the bachelor’s degree are discussed. These findings revealed that there is still a lack of information concerning the new degrees although about 90% of Austria’s university programs have already transitioned to the Bologna system.

Introduction

To meet the requirements of the globalised (business) world, the field of education too must offer both learners and teachers opportunities to take part in the world of mobility and globalization. Therefore, the European Union started the so-called “Bologna process” in 1999 to establish a European Higher Education Area (EHEA). Consequently, structural changes took place in European higher education.

Our paper focuses on the Bologna process, especially on the situation of the Austrian system of higher education where the implementation of the two-cycled study system has led to, a, in Austria uncommon, type of undergraduate degree (bachelor). Two recent studies explored the acceptance of this new study framework asking representative samples of the population and of HR managers, respectively. These results as well as drawbacks and opportunities of the internationalization of the Austrian higher education will be discussed.

Aims and development of the Bologna process

Developing the EHEA started years ago with common educational programs (e.g. the popular ERASMUS exchange program) or the Lisbon convention regarding the recognition of examination (Council of Europe, 1997). Based on the Sorbonne joint declaration on harmonization of the architecture of the European higher education system by the four ministers in charge of France, Germany, Italy and the United Kingdom (1998), the European Ministers of Education (1999) passed in Bologna, Italy a declaration in which “the importance of education and educational cooperation in the development and strengthening of stable, peaceful and democratic societies” is named as an important way to strengthen “a more complete and far-reaching Europe”.

In the communiqués of the Bologna conference and its subsequent conferences (e.g. Prague 2001, Berlin 2003, and Bergen 2005) the central objective of creating the EHEA was refined, and additional countries were admitted. The efforts of the Bologna process led to a structural and partly radical change in the systems of higher education of some of the participating countries. These “revolutions” were necessary to reach the main objectives of the Bologna Declaration (1999) “to establish the European area of higher education and to promote the European system of higher education world-wide“:

Adoption of a system of easily readable and comparable degrees, also through the implementatio n of the Diploma Supplement [...]
Adoption of a system essentially based on two main cycles, undergraduate and graduate. [...] Establishment of a system of credits – such as in the ECTS system – as a proper means of promotin g the most widespread student mobility. [...] Promotion of mobility [... ] for students, [...] for teachers [...]
Promotion of European co-operation in quality assurance [...] Promotion of the necessary European dimensions in higher education, [...] (Bologna Declaration, 1999, p. 2)
To establish the objective of a system based on two main cycles, the Ministers of Education stipulated within the declarations and communiqués that the first cycle of studies shall last at least three years. Completing these studies shall be both “relevant to the European labour market as an appropriate level of qualification” (Bologna Declaration, 1999) and a prerequisite for entering the second cycle which “should lead to the master and/or doctorate degree in many European countries.” (Bologna Declaration, 1999) Along with this objective, the implicit aim of supporting mobility for students is contained in its offering a new and homogeneous European education system with comparable study cycles. A student should be able to earn his/her first degree in his/her own country and continue studies at another university within the EHEA. Moreover, the establishment of the system of credits (ECTS) enables students to transfer results of classes more easily within the EHEA. Also, the Bologna Declaration (1999) demonstrates the possibility of acquiring credits in non-higher education contexts, including lifelong learning.

To sum up, currently, 47 participating countries are working on the establishment of a common area of higher education which distinguishes itself by the easy mobility of its students and teachers. In March 2010, the first part of the process was finished when the ministers responsible for higher education in the countries participating in the Bologna process “[...] met in Budapest and Vienna on March 11 and 12, 2010 to launch the European Higher Education Area (EHEA), as envisaged in the Bologna Declaration of 1999.” (Budapest-Vienna Declaration, 2010)

The Austrian education system and the Bologna process

In this section, the Austrian education system will be characterised, focussing on the situation “praebologna” and the changes initiated by the Bologna process.

Education in Austria

Starting at the age of six, compulsory schooling in Austria lasts for nine years. On both the primary level (primary school, “Volksschule”) and secondary level I (lower secondary school, “Hauptschule”, or lower cycle of secondary academic school, “allgemein bildende höhere Schule or AHS-Unterstufe”) children stay for four years. For the ninth year and further education on secondary level II, students have the choice between vocational educational and training (VET) programs and general education programs.

Vet programmes are provided within the framework of apprenticeship training (dual system), at VET schools (BMSs) and VET colleges (BHSs). General education is imparted in the upper cycle of AHS. Some 80% of schoolchildren opt for a VET programme after completing lower secondary level. (IBW, 2008)

Both AHS and BHS end with a high school diploma which entitles students to enrol at universities. The entrance rates at tertiary level swelled from 27% in 1995 up to 42% in 2007. The Austrian educational system was – especially prior to the Bologna process – and still is characterised by a very low graduation rate as compared internationally, e.g. 9% of all gainfully employed persons in 2001 and 12 % in 2008 (OECD, 2009). Comparing these figures of higher education with other countries such as Finland (with entry rates at the tertiary level between 2000 and 2007 of between 71% and 76%, OECD, 2009) the lack of higher education is often mentioned both in research studies and the news. Nevertheless, there does not seem to be a lack of a well-educated workforce in Austria as a lot of vocational education belongs to the field of secondary level II. For example, technical and commercial education on an advanced level, nursing training or training for kindergarten teachers are done within schools of secondary level II. Moreover, advanced education in the field of accounting or in the public sector are not integrated in the tertiary education sector (Schneeberger & Petanovitsch, 2010).

Before the implementation of the two cycle system of Bologna, diploma studies with a duration of study of about 8 to 10 semesters were prevalent. The students received a higher university degree (“Magister” or “Diplomingenieur”) at the end of their studies, which is assigned to level 7 of 8 possible levels in the European Qualification Frame (EQF) (Austrian Federal Ministry of Science and Research, 2009). So, compared with other countries, Austrian first graduation degrees at tertiary education were on a very high level as shorter courses of study (e.g. bachelor) did not exist (Schneeberger & Petanovitsch, 2010).

Regarding tertiary education, in the last few decades, the average duration of study exceeded the normal duration of study in all courses. Also, a high percentage of students quit from university without a degree (Statistik Austria, 2010). To improve these two factors and to implement a more vocational and structured tertiary education, the universities of applied sciences were established in 1994 (Wadsack & Kasparovsky, 2007). Starting in the academic year 1994/95 with 693 students this sector boomed up to more than 36,000 of the overall approximately 250,000
students in the 2008/09 academic year (Statistik Austria, 2010). Contrary to most courses at universities which offer open access, the universities of applied sciences have acceptance processes and are allowed to choose their students before they start their coursework. Most universities of applied sciences offer both full-time and part-time programs at the bachelor’s and master’s level.

The implementation of the Bologna process in Austria

The declaration of Bologna (1999) as well as the communiqués of the subsequent conferences in Prague (2001), Berlin (2003), Bergen (2005), London (2007), Leuven/Louvain-la-Neuve (2009) and Budapest-Vienna (2010) are not binding agreements in a legal sense but rather voluntary guidelines for designing the EHEA. In Austria, these guidelines were implemented both on a legal level (e.g. Universities Act 2002, Universities of Applied Sciences Act – FHSStG or University Accreditation Act - UniAkkG) and on a institutional level (by the autonomy of universities) (Austrian Federal Ministry of Science and Research, 2009). Focusing on the relevant sections for the studies presented in this paper, selected measures will be illustrated.

To change to the Bologna system consisting of two cycles, new study programs had to be introduced as bachelor’s programs (undergraduate) or master’s programs (graduate). The numbers for courses of study offered at Austrian universities organised in the two cycle system climbed from just 9 in 2000 to 478 bachelor’s programs and 544 master’s programs in 2008. The former existing diploma studies expire in the next few years except in the fields of medicine, dentistry, and teacher training courses. However, because of the inconsistent implementation of the two cycle system (e.g. in the studies of theology and law) (Schneeberger & Petanovitsch, 2010) a larger number of diploma studies still exists (100 in 2008, see Figure 1) (Austrian Federal Ministry of Science and Research, 2009).

![Figure 1. Courses of study offered at Austrian universities.](image)

The implementation of the European Credit Transfer System (short: ECTS) for all diploma, bachelor’s, and master’s studies in 2003 initiated a change of paradigm in the Austrian higher education. Previously, the programs were just input-oriented and defined the extent of a study program by the minimum number of semesters students were to study. Now, however, it is the focus of the curriculum developers which determines the workload of the students (Schwarzl, 2009). Although the credit system has been implemented in all university programs, further effort is needed to increase precision in measuring the workload of the students (Austrian Federal Ministry of Science and Research, 2009).

For the promotion of the “European co-operation in quality assurance” (Bologna Declaration, 1999) the Austrian Quality Agency (AQA) was founded in 2004 to support all Austrian institutions of higher education with the development of processes for quality assurance. Furthermore, the AQA is responsible for the coordination of evaluation procedures in higher education and the Austrian participation in the development of quality standards at the European level (Austrian Federal Ministry of Science and Research, 2009).

Summing up the implementation of the objectives of the Bologna Declaration in Austria, the legal and institutional framework has been changed within a short period of time. Additionally, a lot of changes took place before the recent conference of the responsible ministers of the participating countries in Budapest-Vienna in March 2010. Nevertheless, the Bologna process is not yet complete, neither in Austria nor in the other participating countries. Hence, an internationally operating “Bologna follow-up group” was constituted “to propose measures to facilitate the proper and full implementation of the agreed Bologna principles and action lines across the European Higher Education Area” (Budapest-Vienna Communiqué, 2010).
The reputation of the bachelor’s degree in Austria – Empirical findings

The results of an IFES study (2009) resonated strongly in Austria, which was conducted on behalf of the Viennese Chamber of Labour, the official representation of employees, in the autumn of 2009. A representative sample of the Austrian population (1,000 persons older than 18 years) was interviewed over the telephone regarding their knowledge of tertiary education degrees and their opinion on the occupational outlook of persons with a bachelor’s degree. The aim of this survey was to answer the following questions:

a) Do people have sufficient information about the university degrees?
b) How do people judge the employability chances of those holding a bachelor’s degree?

Concerning the public information about the different university degrees the following main points could be identified:

• In general, the knowledge of the Austrian population about academic degrees is not very high (IFES, 2009, S 4). Although about 50% of the interviewees judge their level of information about the traditional degrees “Doktor”, “Magister” and “Diplom-Ingenieur” as to be “well-informed”.
• The common knowledge about the degrees following the two cycle study system is much lower. Only about 25% feel “well-informed” about these degrees (bachelor’s, master’s). More than 40% admitted to having absolutely no information about that.

The following findings could be revealed concerning the estimation of employability:

• Only about one third think that graduates will have good chances of finding a job having only a bachelor’s degree. About 40% deny that.
• The higher the interviewees education, the more critically they judged the employability of bachelor’s degree graduates.

These results started a very emotional discussion in Austria’s press coverage. Opponents of the Bologna process in particular used these findings for their own purposes.

Qualitative follow-up testing: What HR-managers think about the bachelor’s degree

The results of the study presented above show that the information concerning the new degrees is very low among the Austrian population. Hence, the universities which are offering bachelor’s programs and the Austrian Federal Ministry of Science and Research as the official administrative office in charge of the Bologna process have not informed the public thoroughly enough about these new degrees. Furthermore, the occupational outlook for bachelor’s degree graduates is rated poorly in that survey. Therefore, an explorative qualitative survey asking the most important stakeholder – the employers represented through their HR managers – was conducted.

The main objective of this follow-up study is to validate the results of IFES (2009) by questioning HR managers of six of largest employers for graduates from the course “Business Administration and E-Business-Management” of the University of Applied Sciences Krems in Lower Austria. Structured interviews were conducted between November 2009 and January 2010 including questions regarding the information about university degrees and their estimate for the occupational outlook for university graduates with a bachelor’s degree (Vogl, 2010). The diagnostic interpretation (content analysis) followed the six steps developed by Mayring (2007) and Diekmann (2008).

Question 1: Information about the Bologna process

Basically, all experts state that they have information about the two-cycle study framework according to the Bologna declaration. At first, most of the experts are aware of the – seen internationally– increasing comparability of the new system as compared to the old diploma system. This common structure of tertiary education is seen positively by most of the interviewees. Only one person mentioned the possibility of raising the graduation rate by implementing short degree programs (bachelor’s degrees).

Question 2: Information about university degrees

This question is identical to the survey of IFES (2009). Therefore, a rating scale (“well informed”, “roughly informed”, “not at all informed” was used. Contrary to the “old” diploma studies (all respondents feel well-informed); one third feels roughly informed about the bachelor’s and master’s programs. Hence, these experts feel better informed about the new programs and degrees than the representative sample of IFES (2009). Nevertheless, a difference between the traditional degrees and the programs in the Bologna system can be observed.
Question 3: Employment of bachelor’s degree graduates
Most of the participating companies already employ bachelor graduates, and are also willing to employ more in the future. Only one of these companies does not employ bachelor graduates at the moment, because they only offer few positions for graduates in general.

Question 4: Demands on bachelor’s degree graduates (business programs)
Basically, the respondents expect the bachelor’s degree graduates to have knowledge of business and economics, which should exceed the knowledge of graduates from commercial colleges. As the main distinction between master and bachelor’s degree graduates, the level of specialization was mentioned. In general, five of six respondents said that bachelor’s degree graduates could be employed for positions for which graduates of diploma programs were hired in the past. An exception could be several positions where very specialized knowledge is obligatory. Only one HR manager spoke about a “not comparable education”.

Question 5: Differences between bachelor’s degree graduates (business programs) and graduates of commercial colleges
As mentioned above, the Austrian vocational educational system is characterized by very specialized and well-established colleges on secondary level II combining general and vocational education, e.g. commercial colleges. The experts were asked about the differences between the graduates of bachelor programs and those of commercial colleges. In general, the experts judged the bachelor’s degree holders to be more highly qualified. Concerning the subject-specific knowledge, bachelor’s degree graduates should have higher abilities in networked thinking, more job experience and higher teamwork skills. For most HR managers this distinction between bachelor’s degree graduates and those from commercial colleges is not based on reaching a university degree, but more on the length of education. That is awarded by a higher salary.

Question 6: Occupational outlook for bachelor’s degree graduates
Contrary to the study of IFES, the experts see good employability chances for bachelor’s degree graduates in Austria. Nevertheless, to boost the career of bachelor’s degree holders, the majority of the HR managers advised doing a master’s degree either part-time or full-time after a few years of work experience. Some of respondents also mentioned possible problems for the employer if the employee decides to enrol in a part-time master’s program.

Question 7: Factors influencing the acceptance of bachelor’s degree programs
Beside the lack of knowledge about the new study system (see question 1), the prejudices of academics having studied in the traditional system are judged to be a negative factor. Some HR managers also mentioned that additional degrees (e.g. bachelor) will make the daily work of recruiters more complicated. According to the experts, it is still a factor of uncertainty to hire bachelor’s degree graduates as most of them may start a master’s program (part-time) soon after finishing their undergraduate degree. This may cause restrictions in flexibility and working hours available. Concerning the organizational structure of bachelor programs the HR managers claimed that there is only little flexibility in the curricula and not really much space for academic development. Basically, the majority of the respondents think that the acceptance of the bachelor’s degree in Austria will improve in the future. They recommend supporting this process by initiating information campaigns. All experts suggest reaching and keeping a high level of quality in bachelor programs.

Question 8: Recognition of credits from commercial colleges for bachelor programs
According to the Bologna Declaration (1999) credits acquired in non-higher education contexts can be recognised in university programs. Because of the specialized vocational education at secondary level II some European institutions running higher education programs offer such recognition in an extended way, e.g. recognition of up to three semesters is granted for graduates of commercial colleges when having at least two years of work experience.

All experts agree that this recognition of credits will influence the quality and also the acceptance significantly negatively. Furthermore, the “value” of a bachelor’s degree will drop dramatically. While they agree to recognize some credits, they reject the recognition of certain semesters.

Conclusion
The objective of Bologna Declaration (1999) was to implement an EHEA by 2010. In Austria, the guidelines for the implementation were put into place on both a legal and an institutional level in the years 2000 to 2002. Despite the fact that the process started ten years ago, the mission has not been accomplished. Although about 90% of the study
programs have been transferred into the new system consisting of bachelor’s and master’s programs, neither the average population nor the economy are convinced yet of this new system.

Comparing two recent studies, it is obvious that the level of information about the new academic degrees rises from the average population up to specialists like HR managers. In contrast, there is still a difference between the knowledge about the traditional and the new, two-cycle structure. HR managers, however, see the employability chances of bachelor’s degree graduates more positively than the average population. At the same time, even these experts do not judge a bachelor’s degree to be the same as having accomplished a “full university education”. To have better opportunities on the labour market the experts strongly recommend completing a master’s program in addition. This may be because in Austria the master’s degree is still seen to be equivalent to the traditional diploma degrees. To raise the acceptance of the bachelor’s degree, the experts recommend more information about the new system and to be careful regarding recognition of certain semesters from secondary level II.

The findings revealed by these two studies show that the academic tradition in Austria should have been considered before implementing the Bologna system. Moreover, this new system is mainly based on the Anglo-American academic structure where the status of vocational education is much lower than in Austria. In Austria, an effective vocational education partly occurs even on the secondary level II, while in many other countries these highly specialized skills and competences are only offered at the tertiary level. These facts still lead to a discussion in Austria: Is the realization of the EHEA and in particular the implementation of the bachelor’s degree an educational improvement?

References


Graduate Internships - bridging the academic and vocational divide

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Context
A crisis is emerging regarding graduate recruitment in the UK. In 2010, record numbers (310,000) will graduate coinciding with the most difficult economic circumstances for many years. There is likely to be fierce competition for graduate level jobs as many traditional graduate recruiters cut back. This will be compounded by the thousands (80,000) of graduates from last year, who have yet to find permanent employment, and their accumulated level of indebtedness. Put simply, a political, economic and social time bomb is now ticking and many universities have been tasked to try to find innovative solutions to alleviate the immediate problem and hopefully to develop those that will have longer term impact.

Objectives
1. To outline the graduate internship programme that has been developed
2. To outline this in the wider context of employer engagement and knowledge transfer activity
3. To outline the ongoing research programme that will run in parallel, and which will inform future funding policy and strategy
4. To report on the impact of the first one hundred internships that will be completed by June 2010

Perspectives
Rick Weible recently commented that research in the area of business internships is scarce and needed. That which has been undertaken indicates that good schemes give immediate and longer term benefits to employers, interns and participating universities provided that a programme is well structured, planned and delivered. His research indicates that too many internship programmes ‘are under-appreciated’, and that often, participating universities do not ‘cultivate the potential rewards’, which if thought through could be beneficial in multifarious ways. He comments on the potential for internships to create long-lasting and sustainable economic development and regeneration, value-adding partnerships and other activity, all of which are fundamental to the mission of most universities. He concludes that good quality internships offer benefits to all parties involved, and that growth in the number of participants is worth encouraging.

Recently, the Higher Education Funding Council (England) announced new funding of £13.6m to create 8500 graduate internships across 160 Higher Education Institutions in England, aligned to growth areas within the economy with particular emphasis on placement with small and medium sized enterprises. Thames Valley University will deliver 100 of these, and in addition, will self-fund an additional 100.

This Paper will outline the programme that we have developed, and present research findings based on in-depth interviews and surveys conducted with all of our participants. We will also include data gathered from participants on parallel projects in other universities, which will give a further valuable insight into the impact that these internships have. We intend to track as many of these interns as possible on a longitudinal basis, as with so many of such interventions, the real value can best be seen well into the future.

Conclusions
The findings of this work will help better to understand the value of internships as an intervention in getting graduates into permanent, graduate level, employment. If successful, £1600 per capita investment will have lasting political, economic and social value, and could inform future funding strategy, curriculum design and planning and resource allocation and prioritisation. At TVU, our hope is that internships will become a key part of our employer engagement strategy for the foreseeable future.
Explaining work-related learning for low and high-qualified people:  
The importance of a self-directed learning orientation

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Abstract: Based on the Demand-Control-Support model (Johnson & Hall, 1988; Karasek, 1979; Karasek & Theorell, 1990) and the research by Raemdonck (2006) the present paper aims to investigate the influence of job-characteristics such as job demands, job control, social support at work on the one hand and self-directed learning orientation on the other hand on the work-related learning behaviour of the worker. The paper presents results from two studies conducted among students in centres for part-time vocational education and among employees working in the ICT-department of a large company, both located in Flanders. A questionnaire using scales adapted from validated instruments was used. It was assumed that high scores for self-directed learning orientation and high scores for job demands, job control and social support would be associated with more work-related learning behaviour. The results indicated that only a self-directed learning orientation predicted the work-related learning behaviour to a significant extent.

Introduction

In today’s rapidly evolving society, we are confronted with an exponential increase in information, a growing need for innovation and the requirement to develop sufficient skills. Schools, enterprises, and players in the field of training and development are faced with the challenge of finding, valuing and further developing every talent. Teaching and training in the workplace is one of the most important tools for improving the difficult connection between education and the labour market. As a result, the value which is placed upon learning in the workplace has increased. Everyday work practice is full of potential learning processes. These can be very effective and necessary for the purposes of becoming more expert in a profession. Learning often takes place without one being aware of it, by making mistakes and redoing, talking with colleagues, observing, reading and listening to others. How such a powerful learning work environment can be created, is a matter for which educators and HRD professionals are responsible. However, it is not just a quality work environment which is of importance; equally important is how the individual copes with successive changes. In this paper we want to further enlarge our understanding of the factors explaining work-related learning. We will do this by means of presenting a research model that has been investigated with both low and high qualified people in two different contexts: the context of learning at work in part-time vocational education (low qualified people) on the one hand and ICT-workers in a large company (high qualified people) on the other hand. In the next paragraphs we discuss the most important variables in the research model and end our introduction with a description of the model.

Job characteristics and work-related learning

The characteristics of the work which is done determine the quality of the learning workplace. From the literature, it is apparent that job characteristics such as job demands and job control are related to negative outcomes such as tension, work stress and dissatisfaction with work (e.g. de Jonge, Le Blanc & Schaufeli, 2003). Recently, research has also been done into job characteristics as determinants of positive outcomes such as well-being, self-confidence and active learning behaviour. Insight into the role of job characteristics is, therefore, of great importance. Karasek’s demand-control model (DC model) and the derived demand-control-support model (DCS model) are leading theoretical models in research into the psychology of work (Taris, et al., 2003). The DC model assumes that a work environment can be described in two dimensions: Job demands on the one hand and job control on the other (see Figure 1).

Job demands (horizontal axis) refer to the physical and mental efforts involved in the work, specifically that a large volume of work is to be performed under conditions of high requirements and time constraints. Job control (vertical axis) refers to the worker’s control over his or her work processes, in other words, the ability to make decisions and the opportunity to exercise a degree of control over the work to be carried out oneself in order to satisfy these job demands.
Figure 1. The demand-control model (based on Karasek, 1979)

A third dimension has been added over time by Johnson and Hall (1988): work-related social support. This means the existence of good relations with colleagues, being able to rely on others, obtaining accurate information via others, and gaining actual help, understanding and attention when difficulties are encountered (De Jonge et al., 2003). The most favourable effects on work-related learning are expected with a combination of high job demands, high job control and high social support (also known as Karasek’s learning hypothesis).

A self-directed learning orientation and work-related learning

The development and fruition of the knowledge economy and numerous technological changes not only require more highly-trained workforces, modern employees are also expected to be willing to continue to learn. The notion of lifelong learning has become generally accepted. An attitude of continual learning requires an orientation towards self-direction and flexibility. A self-directed learning orientation is defined as a relatively stable tendency to take an active and self-starting approach to work-related learning activities and situations and to persist in overcoming barriers and setbacks (Raemdonck, Plomp & Segers, 2008). Employees with a pronounced self-directed learning orientation identify learning opportunities, show learning initiative, undertake learning activities, and persevere in overcoming barriers to learn. In contrast, people who are less oriented towards self-directed learning exhibit the opposite behavior: they fail to identify learning opportunities, let alone seize opportunities to learn (Seibert, Kraimer & Crant, 2001). As self-directed learning orientation is found in persons who actively shape learning activities and situations, we expect employees with a self-directed learning orientation to exhibit more actual work-related learning.

We state that a self-directed learning orientation is important for every job at every level in the present knowledge society. In the present paper we want to examine the importance of both work-related variables (such as job demands, job control and social support at work) and the person related variable ‘self-directed learning orientation’ for explaining work-related learning in different work settings. We will illustrate our statement by means of a research in two different contexts of workplace learning: the context of learning at work in part-time vocational education on the one hand and ICT-workers in a large company on the other hand. Our study is based upon the learning hypothesis from the Demand-Control-Support (DCS) model (Johnson & Hall, 1988; Karasek, 1979; Karasek & Theorell, 1990) and the research by Raemdonck (2006). The aim of our study is to investigate the influence of job-characteristics such as job demands, job control, social support at work on the one hand and self-directed learning orientation on the other hand on the work-related learning behaviour of both high and low qualified people at work (see Figure 2).
Figure 2. Research model: determinants of work-related learning.

Research questions

The aim of this study is to examine the relation between the independent variables of a self-directed learning orientation, job demands, job control and job support and the dependent variable of work-related learning behaviour. The following research questions are central to this:

1. Is self-directed learning orientation positively related to work-related learning?
2. Are job demands positively related to work-related learning?
3. Is job control positively related to work-related learning?
4. Is social support positively related to work-related learning?
5. Is a high score for self-directed learning in combination with high job demands, high job control and high social support favourable to work-related learning?

Method

Measures

Already validated questionnaires for measuring the 4 independent variables were administered in both the context of learning at work in part-time vocational education and the context of ICT-workers in a large company. In the next paragraphs we will discuss the research instruments that we used to measure the variables that are included in our research model.

Job characteristics. For the measurement of the DCS characteristics, we selected items from existing questionnaires of De Jonge, (1994), Hackman and Oldham (1975), Karasek (1985), and Warr, (1990). The three characteristics are measured using five-point Likert scales, which range from one for strongly disagree to five for strongly agree. Job control is measured using a scale that consists of ten items. Only the aspect ‘decision authority’ is measured here (see above). This is the amount of say an employee has in his job. The respondent is asked about the extent to which the job that the students perform at their learning workplace provides them with the opportunity to “stop working when they like” or “to determine their own way of working”. Job demands are measured by means of eleven items and refer to statements such as “My job requires that I work very hard”, while questions are asked about social support on the basis of five items such as the statement “I receive much support from my colleagues”.

Self-directed learning orientation. The self-directed learning orientation scale is an eleven-item scale developed on the basis of the short version of the Proactive Personality Scale of Bateman & Crant (1993) and the Personal Initiative Scale of Frese, Fay, Hilburger and Leng & Tag (1997). Empirical evidence demonstrates that self-directed learning orientation is a uni-dimensional construct (see Raemdonck, 2006). Examples of items are “A difficult task does not hold me back” and “I am constantly looking for new ways of improving my job performance”. Participants were asked to indicate on a five-point scale (ranging from one = strongly disagree to five = strongly agree) to what extent each statement was applicable to them.
Work-related learning is measured on the basis of a self-developed instrument. In ten items, the respondents were asked about the frequency with which they had actually participated in certain work-related learning activities during the past year, for example the acquisition of new information, the finding of solutions to problems, and the performance of new tasks. This is measured on a 4-point scale ranging from one (almost) never to four (almost) always. An exploratory factor analysis with a main components extraction and Varimax rotation for the ten items en masse, showed that all items loaded on one and the same factor which explained circa 40% of variance. Factor loadings for the ten manifest variables ranged from .580 till .731. Also content wise, these ten items like; “learning new things”, “creating new ideas”, “looking for new information”, seem to reflect several aspects of work-related learning behaviour.

Analyses
Correlation analysis and multiple regression were applied to analyze the research model. In order to analyse the suggested interaction influence between job demands, job control and social support, interaction terms with dummies were prepared. The latter analysis was not performed for the study with the ICT workers because of the smaller sample of respondents in that context.

Results

Study 1 Respondents
The questionnaires were administered to students (N = 115) from three schools providing part-time education. As not all students from the part-time secondary vocational education have jobs, only students who had a job contract as part of their training were questioned for the study. The questionnaire was administered by one member of the research team during class. The completion of the questionnaires was always preceded by an introductory talk. The study includes students from the different training “rubrics” which are offered by the Flemish part-time educational system: woodwork (9.6%), catering industry (10.5%), metal industry (10.5%), Business and administration (7.8%). Participants represented several training sectors (e.g. Assistant cook, kitchen staff within catering rubric) from which the rubrics are composed. The age of the respondents, ranged from 15 to 22.

Descriptives
There was a noticeably high score for the personal characteristic ‘self-directed learning orientation’ (see Table 1). With regard to the job characteristics, it is noticeable that social support at work gets a high score. Students often state that they “receive support from their colleagues to get their work done”. Mutual relations between colleagues are good and their superiors appear to be an encouraging influence in many cases. It appears that the average student from the part-time vocational education sector does not have a great say (job control) in his work tasks. With an average of 2.69 for control on a scale ranging from one to five, the half-way mark is not reached. Most respondents are of the opinion that they have few opportunities to determine the nature of the work and the amount of work over a particular period. The job demands tend to be rather high in the view of the students. This characteristic obtains an average score that lies just above the median (3.30 on a scale of one to five).

Table 1. Averages, reliability, standard deviations and number of items per scale (study 1)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>α</th>
<th>SD</th>
<th>Number of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job demands</td>
<td>3.30</td>
<td>.72</td>
<td>.58</td>
<td>11</td>
</tr>
<tr>
<td>Job control</td>
<td>2.69</td>
<td>.79</td>
<td>.69</td>
<td>10</td>
</tr>
<tr>
<td>Social Support</td>
<td>3.98</td>
<td>.79</td>
<td>.73</td>
<td>5</td>
</tr>
<tr>
<td>Self-directed learning orientation</td>
<td>3.74</td>
<td>.83</td>
<td>.54</td>
<td>11</td>
</tr>
<tr>
<td>Work-related learning</td>
<td>2.55</td>
<td>.83</td>
<td>.49</td>
<td>10</td>
</tr>
</tbody>
</table>

It is apparent from the correlations in Table 2 that two independent variables correlate in a significant and positive way with the dependent variable of work-related learning behaviour: self-directed learning orientation and job demands. The independent variables of ‘job control’ and ‘social support’ are not significantly correlated with the
dependent variable of ‘work-related learning’. Furthermore, Table 2 shows that ‘self-directed learning orientation’ and ‘job demands’, ‘self-directed learning orientation’ and ‘social support’, and ‘job demands’ and ‘social support’ are significantly correlated with each other. These correlations are also positive and moderate to strong (between 0.30 and 0.50; Cohen, 1988).

Table 2. Correlations between 4 independent variables and work-related learning (study 1)

<table>
<thead>
<tr>
<th></th>
<th>Self-directed learning orientation</th>
<th>Job demands</th>
<th>Job control</th>
<th>Social support</th>
<th>Work-related learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-directed learning orientation</td>
<td>1</td>
<td>411**</td>
<td>197*</td>
<td>317**</td>
<td>485**</td>
</tr>
<tr>
<td>Job demands</td>
<td>1</td>
<td>.053</td>
<td>.316**</td>
<td>.287*</td>
<td></td>
</tr>
<tr>
<td>Job control</td>
<td></td>
<td>1</td>
<td>.218*</td>
<td>.122</td>
<td></td>
</tr>
<tr>
<td>Social support</td>
<td></td>
<td></td>
<td></td>
<td>.122</td>
<td></td>
</tr>
<tr>
<td>Work-related learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

* significant correlation (p < 0.05, two-tailed)
** significant correlation (p < 0.01, two-tailed)

Predictors of work-related learning

A multiple regression has been carried out in order to discover what influence the job characteristics and self-directed learning orientation have on work-related learning behaviour. In Table 3, the standardised regression weightings for the four independent variables are included. These relate to the three job characteristics of job demands, job control and social support and the personal characteristic of self-directed learning orientation. These constitute the main model as shown in Figure 2.

This main model is able to explain 19.3% of the variance within work-related learning, as can be seen in Table 3. Self-directed learning orientation appears to be the greatest and only significant predictor of work-related learning. An increase of one point on the scale of self-directed learning orientation is associated with an increase of 0.412 on the scale for work-related learning. From this analysis, the job characteristics (demands, control and support) appear to have no significant positive influence on work-related learning behaviour.

Compared with the variable of self-directed learning orientation, the influence of the job characteristics is rather modest and not significant. Noticeable is the small negative effect of social support on work-related learning. The support that students receive from their colleagues appears not to stimulate their work-related learning in the learning workplace. The effects of job demands and job control are certainly positive, but not significant with regard to work-related learning. The influence of job demands (e.g. time pressure) is greater than the effect of job control (e.g. taking decisions oneself) over work-related learning.

Table 3. Standardised regression weightings for work-related learning (study 1)

<table>
<thead>
<tr>
<th></th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-directed learning orientation</td>
<td>.412*</td>
</tr>
<tr>
<td>Job demands</td>
<td>.157</td>
</tr>
<tr>
<td>Job control</td>
<td>.082</td>
</tr>
<tr>
<td>Social support</td>
<td>-.058</td>
</tr>
<tr>
<td>R²</td>
<td>.193*</td>
</tr>
</tbody>
</table>

* = p < .05

According to Karasek’s DCS model, active learning behaviour probably occurs more frequently in work situations that combine high demands, much control and much social support. In order to explore this hypothesis,
interaction terms are added to the main model. None of these added interactions appears to exert a significant influence over work-related learning. The outcome of this analysis is presented in Table 4.

Table 4. Standardised regression weightings for work-related learning with 2- and 3-way interactions (study 1)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-directed learning orientation</td>
<td>.370*</td>
</tr>
<tr>
<td>Job demands</td>
<td>-.545</td>
</tr>
<tr>
<td>Job control</td>
<td>-.884</td>
</tr>
<tr>
<td>Social support</td>
<td>-.053</td>
</tr>
<tr>
<td>Job demands*Job control</td>
<td>1.111</td>
</tr>
<tr>
<td>Job demands*Social support</td>
<td>.017</td>
</tr>
<tr>
<td>Job demands<em>Job control</em>Social support</td>
<td>.093</td>
</tr>
<tr>
<td>R² (Adjusted R²)</td>
<td>.186*</td>
</tr>
</tbody>
</table>

* = p < .05

**Study 2**

**Respondents**
The questionnaires were administered online to employees working at Kluwer Technology Solutions (KTS). KTS is part of Kluwer Belgium, a leader in information services for professionals in different areas. A total of 73 participants responded to the questionnaire (response rate of 52%). 73% of the participants was male, 27% was female. The age of the participants varied between 20-51 years old.

**Descriptives**
There was a noticeably high score (M=3.74) for the personal characteristic ‘self-directed learning orientation’ among the participants from KTS (see Table 5). The employees strongly agreed on items such as: “A hard to solve work task doesn’t stop me” and “I am always looking for better ways to fulful my work duties”. With regard to the job characteristics, it is noticeable that job demands get the highest score (M=3.63) in combination with the smallest standard deviation (.53). Employees strongly agreed on items such as: “My job demands a high degree of concentration and accuracy” and “I need to perform a lot of mental work”. At the same time, by giving items like “my work offers the possibility to choose my own way of working” high scores, they report being able to exert quite a degree of job control (M=3.23) over their work tasks. With an average of 3.56 for social support, the employees agree to have collegial support on the job when problems or questions occur.

Table 5. Averages, reliability, standard deviations and number of items per scale (study2)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>α</th>
<th>SD</th>
<th>Number of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job demands</td>
<td>3.63</td>
<td>.811</td>
<td>.529</td>
<td>11</td>
</tr>
<tr>
<td>Job control</td>
<td>3.23</td>
<td>.868</td>
<td>.683</td>
<td>10</td>
</tr>
<tr>
<td>Social Support</td>
<td>3.56</td>
<td>.788</td>
<td>.661</td>
<td>5</td>
</tr>
<tr>
<td>Self-directed learning orientation</td>
<td>3.74</td>
<td>.832</td>
<td>.460</td>
<td>11</td>
</tr>
<tr>
<td>Work-related learning</td>
<td>2.86</td>
<td>.918</td>
<td>.555</td>
<td>10</td>
</tr>
</tbody>
</table>

It is apparent from the correlation in Table 6 that two independent job characteristics variables correlate in a significant (p<0.01) and positive way with the dependent variable of work-related learning behaviour: ’job demands’ and ’job control’. The independent variable ‘social support’ is not significantly correlated with the dependent variable of ’work-related learning’. The personal characteristic ‘self-directed learning orientation’ correlates with
.612 positively with the dependent variable of work-related learning. This correlation is significant on the 0.01 level and can be interpreted as strong (Cohen, 1988).

Furthermore, Table 6 shows that ‘self-directed learning orientation’ and ‘job control’, and ‘job demands’ and ‘job control’ are significantly correlated with each other. These positive correlations are moderate (around 0.30).

Table 6. Correlations between 4 independent variables and work-related learning (study 2)

<table>
<thead>
<tr>
<th></th>
<th>Self-directed learning orientation</th>
<th>Job demands</th>
<th>Job control</th>
<th>Social support</th>
<th>Work-related learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-directed learning orientation</td>
<td>1</td>
<td>.220</td>
<td>.333**</td>
<td>.134</td>
<td>.612**</td>
</tr>
<tr>
<td>Job demands</td>
<td>1</td>
<td>293</td>
<td>.015</td>
<td>.334</td>
<td></td>
</tr>
<tr>
<td>Job control</td>
<td>1</td>
<td>.149</td>
<td>1</td>
<td>.357**</td>
<td></td>
</tr>
<tr>
<td>Social support</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Work-related learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

* significant correlation (p < 0.05, two-tailed)
** significant correlation (p <0.01, two-tailed)

Predictors of work-related learning

The prediction of work-related learning was tested using the enter method of a multiple regression analysis. The model with 4 independent variables clears of 42.9 of variance of work-related learning. Based on our results job demands, job control, social support are no significant predictors for work-related learning. Self-directed learning orientation seems to be the only significant predictor for work-related learning. The standardised regression coefficient (Beta) for self- directed learning orientation is .534. Table 7 shows results from multiple regression analysis for work-related learning.

Table 7. Standardised regression weightings for work-related learning (study 2)

<table>
<thead>
<tr>
<th></th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-directed learning orientation</td>
<td>.534*</td>
</tr>
<tr>
<td>Job demands</td>
<td>.179</td>
</tr>
<tr>
<td>Job control</td>
<td>.159</td>
</tr>
<tr>
<td>Social support</td>
<td>-.038</td>
</tr>
<tr>
<td>R²</td>
<td>.429*</td>
</tr>
</tbody>
</table>

* = p < .05

Conclusions

Discussion results

Both the results from the part time vocational students and the KTS-employees point in the same direction: there is no support for the learning-hypotheses as described in the Karasek model. Self-directed learning orientation seems to play the most important role for both the (low qualified) students in part-time vocational education and the (high qualified) KTS-employees in explaining work-related learning. No link has been established between job characteristics of the workplace and the work-related learning of students from the part-time vocational education sector and of ICT-employees working within an information service company. This is not what was expected. The assumption, based on the learning hypothesis of Karasek, was that high demands from the learning work environment, many opportunities for control over work tasks and much social support would show a positive link with work-related learning. However, on the basis of the study results, these three do not appear to have a significant positive influence in both studies.
The significant positive influence of a self-directed learning orientation confirms the expectation that individuals who are highly self-directed in their orientation towards learning also actually learn more in a work-related way. Consequently, it is important to develop the self-directability of students and employees. In this way, this population of students and employees can also acquire skills that can result in higher employability as well as organisational success (Guglielmino & Guglielmino, 1994, Raemdonck & Thijsen, 2005, Van Loo, 2002). Our study shows that the work-related learning of students in vocational education and ICT-workers relies on their personal characteristics. In future, it would be wise to explore the role of such personal characteristics in work-related learning further as well as to look for possibilities for developing these personal characteristics at school and in on-the-job learning. Both for high and lower qualified people investing in the development of a self-directed learning orientation seems to be important for enhancing learning at work.

**Limitations**

Several limitations of the studies are worth mentioning. First, a cross-sectional design was used in both studies. Potentially interesting questions regarding development over time of work-related learning were not able to be addressed (Taris, Kompier, De Lange, Schaufeli & Schreurs, 2003). A longitudinal follow-up of the respondents would allow making causal relationships regarding the influence of interpersonal variables and job characteristics on work-related learning.

Secondly, all variables measured in the research studies were obtained through self-report. The magnitude of the effects reported may have been biased due to common-method variance.

Thirdly, the current studies involved a sample of students from only three schools in the vocational education sector in one region and a sample of ICT-workers from one large company, so both samples were more or less homogeneous. Future research should test the research model with more non-homogeneous samples and should not solely rely on self-reports. Learning behaviour can be assessed by the supervisor.

**Implications for the practice of workplace learning both in education and at work**

Despite the limitations of the present study, some important implications can be drawn. The highest levels of work-related learning are found in those students and employees who show a high orientation towards self-directedness in learning. Therefore, the stimulation of self-directed learning orientation should be maximised in the workplace and at school. Better information regarding “learning on the job” can be made available to students, workers and managers of employing organizations as a result of a greater co-operation with vocational education and training providers. The provision of the part-time vocational education and (internal or external) training can also be more focused on the teaching and development of this self-directed learning competence, including learning how to learn.

From the results, it appears that students from the part-time vocational education sector and the ICT-employees on average attribute high scores to social support. They are of the opinion that they receive a great deal of support. Despite the support they receive in the workplace, this does not appear to have the effect of stimulating work-related learning. There is a risk of students and employees developing undesirable action plans as a result of ‘wrong support’ (Taris, 2007). Therefore, ‘negative’ social support should be prevented. In this way, one can minimise the negative effects of it on workplace learning. It would appear desirable to look for systems which enable students and employees to receive and give ‘accurate feedback’ at times when this is necessary. In this way, students and employees can further develop ‘appropriate action plans’. For this, clear agreements and co-operation is essential.

Our findings hardly support the views of Karasek and Theorell for students in part-time vocational education and in ICT-workers. The beneficial effects of high job demands, high job control and high social support were not confirmed. Instead, a self-directed learning orientation was associated with higher levels of work-related learning. It would be interesting to see whether these results can be replicated beyond the context of part-time vocational education and within other professions then ICT-workers. Future longitudinal studies will have to verify the results found in this study.

**References**


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Web 2.0 as a potential tool for bridging borders between school and university during internships

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Abstract: This paper focuses the use of Web 2.0 applications such as Facebook or twitter as a tool for bridging different learning environments. Particularly the voluntary use of Facebook as one tool during internships will be discussed concerning the reflection of different experiences during the internship. From the perspective of the activity theory the usefulness of Web 2.0 for becoming a Reflective Practitioner will be analyzed in form of a single case study.

Introduction and Research Design
Voluntary or compulsory internships are part of education in various types of schools or universities, especially in vocational education. This paper is based on an internship of a student becoming a teacher. The internship is a compulsory part of his study program. Therefore University is the place of education and school the workplace. One of the main objectives of internships is to complement the mainly theoretical education in a workplace. Changing between two learning environments is challenging for the trainees. They have to cross different borders e.g. institutional (understanding and handling of structures in the new environment) or socioculturally determined (handling different organisational cultures). Bridging these two learning environments is one of the main challenges in the didactical design of internships. Different tools can be used for bridging: portfolios, exploration tasks or learning journals.

From the perspective of the professionalisation process these tools are one helpful element in reflecting on practical experiences, as they facilitate becoming a Reflective Practitioner (Schön 1983). However a main problem concerning these tools is their usefulness from the students’ perspective. In many cases they perceive these tools as an unnecessary additional work load (Dimai 2002; Baumgartner/Welte 2001; Baumgartner/Laske/Welte 2000). On the other hand, pupils are using online-tools to comment on their activities and thoughts. This paper focuses on Web 2.0 and its different applications and opportunities for consuming, producing and reproducing content.

Web 2.0 is the business revolution in the computer industry caused by the move to the internet as platform, and an attempt to understand the rules for success on the new platform. Chief among those rules is this: Build applications that harness network effects to get better the more people use them. (O’Reilly 2006, www1)

Some of these applications are the so called social-network sites like “MySpace”, “Facebook”, “Xing” and more local and smaller versions like “StudiVz” having big market power in e.g. countries where the same language is spoken. Particularly smaller networks seem to lose market shares to the benefit of the big networks. Like cyber-nomads, having grazed up one oasis, users are moving to the next network using new and often more complex applications. One of the platforms enjoying popularity in the German speaking countries over the last few years seems to be Facebook. It is resounded throughout the land nowadays, although e.g. in a 2007 published book (Alby 2007) dealing with the topic Web 2.0 it is not even mentioned. Next to Flickr and Lycos iQ, MySpace and Xing (in former times OpenBC) these are the main platforms discussed in the book.

Facebook's mission is to give people the power to share and make the world more open and connected. Millions of people use Facebook everyday to keep up with friends, upload an unlimited number of photos, share links and videos, and learn more about the people they meet. (www2)

According to the data published on Facebook’s service site there are more than 400 million active users all around the world and about 50 % of them are logging in on to Facebook on any given day. About 35 million users are updating their status each day and 60 million people are posting every day (www3). In this context it is not very surprising that people also use the updating of their status to comment on personal activities e.g. work, relationship or evening activities. Interestingly, students on an internship sometimes comment on their (work) experience very
Students who use Web 2.0 applications are reflecting on their internship related experiences on the internet, without seeing it as a task or additional work.

What sense do they see in social software like Facebook?
What is the difference between posting in Facebook and writing a learning journal?
Are there any consequences for their development as a teacher?
What could this mean for the professionlisation process, especially for becoming a “Reflective Practitioner”?

The purpose of the paper is to present some suggestions, which could be helpful in answering these questions. This paper argues for a horizontal process of professionlisation – e.g. temporary change from University to a workplace – embedded in different activity systems. Based on the theoretical background of the “Activity Theory” by Engeström (Engeström 1987, Engeström et al. 1995; Engeström 2008) and the understanding of becoming a Reflective Practitioner by Schön (1983) the questions have been explored by the use of a single-case study as Schön argues that the unique case is of special interest for studying reflection-in-action (Schön, 1983, p. 108).

The data consists of information gathered in form of a covered observation, a document analysis and a structured interview with the participant. This triangulation is important in order to attain different views on it and to check the data in front of other points of view (Flick 2005). Over a period of five months one students Facebook activity was observed regarding his statements on his internship. The second source of data is a document analysis. As a participant of a lecture the observed subject had to compile a portfolio about his individual progress in becoming a teacher. In order to validate and deepen the understanding of these two sources the student was interviewed and confronted with different questions concerning his internship, his understanding of the study program and the collected data. The participant gave his permission for this research project and allowed the use of all the data. All the data used in this paper has been translated from German into English.

**Theoretical framework**

From the perspective of “Activity Theory” bridging different learning environments is important for professionlisation processes. This perspective is different from a traditional view, where a novice is climbing different vertical stages in becoming an expert. The horizontal perspective in this context means, that people are working in different activity systems or have to change between different activity systems for their work or for learning. Bridging from this point of view is a kind of a horizontal process of becoming an expert. From this perspective it is not possible to become an expert, while staying within one system – e.g. University. People have to change the activity systems, if they want to become an expert. For this reason students leave University for a limited period of time to do internships.

It is no longer sufficient for an individual to acquire expertise within the boundary of one’s own discipline or profession nor is it possible for one to know everything, even in one’s own field of expertise. (Tsui/Law, 2007, p. 1289)

An activity system is the total sum of individual goal-directed actions, but it can not be reduced to these actions. They are only the visible part of a system, which is even more. Actions have a starting point and an ending. In contrast activity systems have a kind of cyclic rhythm and a long historical half-life (Engeström et al., 1995, p. 319). During an activity, the process and motives are reconceptualised and different new forms of activities and patterns of activities are created (Tsui/Law 2007, p. 1291). An important consequence of this perspective is that an activity system can be seen as combination of different components.
The specific understanding of the components and the interaction between them is important for learning processes. The components are rules, community, division of labour, subject, instruments and the object (Engeström 1987). Activities are essentially embedded in an activity system. For example the activity of learning different teaching methods is embedded in the class at the university. Next to the student himself as the subject and the learning object “teaching methods”, the different rules (e.g. of working together in a class at the university), the community of the other students in class and outside the class with their comments and contributions, and the division of labor (e.g. the lecturer who designs the learning environment) are important too.

A learning journal or Facebook could be interpreted as an instrument in the activity system University and for the internship. Depending on the topic (object) the update deals with, the student has the possibility of changing between different activity systems nearly every second. These possibilities offer a new perspective on the understanding of reflecting in action and reflecting on practice (Schön, 1983). Schön argues that ordinary and professional practitioners often think about what they do and sometimes even while they are doing it (Schön, 1983, p. 50).

Reflecting-in-action. If common sense recognizes knowing-in-action, it also recognizes that we sometimes think about what we are doing. Phrases like “thinking on your feet,” “keeping on your wits about you,” and “learning by doing” suggest not only that we can think about doing but that we can think about doing something while doing it. (Schön. 1983, p. 54)

A special feature of posting in Facebook is the possibility for – nearly – real time postings. Computers are everywhere – offices, teachers lounges, sometimes class rooms – and using mobiles for surfing the web and therefore posting status updates has become more popular lately. Facebook offers the opportunity of getting feedback on different questions of persons, who are not an immediate part of the community. Hence people from diverse systems can become a partner in a professionalisation process and they – sometimes – give feedback on different updates and discuss them. This shows the possible reflective potential of Facebook as one medium for articulating and discussing different actions and questions concerning the own professionalization process. Commenting on and discussing updates might create a different view on the updates posted. According to Schön (1983) the development of expertise and the relevance of reflection for this process is very important. With reflection a trainee can discover and criticize the own tacit understanding, which arose from the experience of one’s specialized practice. Through reflection one can make new sense of situations of uncertainty or uniqueness (Schön, 1983, p. 61).
The case

The participant in the study is a 28 year old student of business education. After finishing high-school he started to work for a bank, which he did not like. So he started to study economics and changed to business education. After graduating this special study programme you are allowed to teach in different vocational schools on an intermediate and higher level e.g. medium-level secondary commercial school. As one part of the programme, the students have to make an internship for one term in one of these schools. The particularity of this internship is the necessity to teach about 120 hours. During this period the student spends his time in school. A university lecture accompanies the students’ internship, starting with a workshop at the University and ending with a final-workshop at the beginning of February. Therefore February was part of the observation period as well.

The following figure gives a brief overview on the number of status updates – in total 42 updates – concerning the internship over the whole period. All other updates concerning his private life e.g. conversation with friends or hobbies are not part of this study and therefore not part of the following figure.

![Figure 2: Number of status updates concerning the internship over the whole period](image)

Overall, the student found that the internship was a very intensive experience, which brought a kind of break to the ‘normal’ daily routine as a student.

You got 8 terms normal daily life as a student. Going to university, learning, going home, handling other stuff. The internship is a total break. For me it was a total break. Maybe because it was in Wörgl (about 60 km away from hometown, MA). I had a extremely long journey. It was like earlier in the working world. Getting up at 6 o’clock and going to work. After coming home you have lunch, prepare your lessons for the next day and the day is done. (interview)

According to his statements in the interview he already realized this point at the beginning of October. In general there is a close relationship between the other two data sources and the number of status updates. This could also be seen as a curve of motivation during the internship. As the trainee mentioned in the interview, he got deeper and deeper in to the topic and teaching became the main focus of his activities in November. His motivation to post updates becomes lower and lower during this period and is at its lowest during the first half of December. The first problems in school and with his own role emerge during this period in November and December. The number of updates in December is higher, but only 3 out of 10 updates have been posted in the 1st half of December. About 4 updates were posted in the last week before Christmas. At the beginning of December different problems concerning daily life were in the focus of the updates.

school, snow, getting up at 5.20 a.m., weekend … -> not sure, if this is good or bad. (Status update, 4. December)

like each evening, desperate looking at oebb.at (national railways, MA), if there are some commuter-friendly trains now. Result: negative… good night! (Status update, 5. November)
Some problems with the supervisor teacher in school also emerged, which had some effects on the internship, as the trainee mentioned.

  I don’t want to say, that it is her or my fault. We just didn’t find a basis. Because of the relationship of dependence it brought some pressure to me. I have it each day. I saw her each day and had to stand the pressure. Yes, I think she recognized it. I tried to hide it and brace myself, but you can’t hide it over such a long period of time. (interview)

Interestingly these problems have not been an explicit part of the status updates. In only two out of 42 updates there were subtle hints concerning the problems with the supervisor at school. Regarding bridging the gap between the activity system university and the activity system school Facebook as a platform was important for the student from an individual perspective. From the trainee’s point of view Facebook offered the possibility of staying in touch with the community at the university. In the challenging situation of entering an unfamiliar activity system Facebook offers a kind of security and the chance to share different experiences with the community at the university. The importance of Facebook during the internship appears to be as follows:

  Quite important. Not for the internship itself or for my status updates. I organized my studies in a way, so that I had time for myself during the week. … Going out in the evening with friends, to the cinema or to have a drink. This social contact was very difficult for me during the internship. I had to get up each morning and therefore I did not have the opportunity of going out in the evening. … I missed the personal contact. So I had a lot of contact via Skype and Facebook. So you got the information from the others. I had a look at the photos of the others and the comments. And so I was informed. (interview)

Several conclusions can be drawn from this. On one hand Facebook offers the possibility of changing between different activity systems very rapidly. Even if you are at school, you have the possibility of staying in touch with the other activity systems. On the other hand, especially with regards to becoming a Reflective Practitioner you have the chance to get feedback from people who aren’t part of the system you are in, and might offer a different point of view on various situations. This point leads to a remaining question: What is the contribution of Facebook or the comments of friends on different updates to the process of professionalisation as a Reflective Practitioner? A professionalisation process is a guided process and a conscious process. This might hint at a limited contribution of Facebook on the one hand and a wide potential on the other hand.

Blogs as Web 2.0 applications have very similar functions to handwritten journals (diaries), depending on the blogger and his intention, to publish different topics. But while the number of blogs starts to stagnate, microblogs like twitter and similar functions like status update on Facebook are popular at the moment (Zeger, 2009, p. 29). Posting updates and comments on Facebook is a very free and informal activity. This is the main difference to writing a learning journal. And as long as it is informal and free, it might have a deep level of reflection but this level is not granted.

  There is a difference in the length. Writing a learning journal means, at least writing half of a page. As I mentioned before, a learning journal is something, where you think about different things, where you reflect. But this one (Facebook, MA) seems not to be very reflective. This is just a reproduction of my disposition. (interview)

Becoming a Reflective Practitioner means that you have the plan, to think about your actions, starting an inquiry on your actions. The inquirer tries to shape a situation to his own frame, but he keeps himself open to the situation’s back-talk. The inquirer should be ready to enter in to new confusions and uncertainties. It is important for the student to act in front of an adopted view, knowing that there is a possibility of breaking out and making new sense of a situation (Schön, 1983, p. 164).

This aspect was not very present in the 42 status updates in Facebook. Of course some problems with pupils in school were part of the updates (e.g. some pupil don’t want to get it; status update 16. December), but the trainee did not attempt to reflect on or reframe the actions. The medium Facebook might have the potential for discussing different topics and thinking about them or getting feedback. This was evident during the interview with the
participant, when he commented on his status updates. At this point he started thinking about them and reflecting the internship:

Ok. Here you can see the conflict mentioned before. … Joining an accounting group. Yes, I really think this group shows you teaching reality. You are standing in the classroom, explaining things and they look at you with big eyes. Ha? And then they say: Yes I have got it. Next day, they have the same asking eyes? Yes tests, I loved them (ironic, MA)! Correcting them was really awesome. Creating the 1st test I did not really think about it. I just thought, that I have to create a really good assignment. The result was, that I had to calculate 16 tests. Creating the 2nd test I did not make the same mistake. (interview)

From the point of an observer the conflict the participant mentioned in its intensity was not possible to identify in the updates. The student himself identified the problems with the supervisor teacher very well, while reading the different updates. This cases study shows the limits and opportunities Facebook offers for a professionlisation process. On the one hand it is a very fast medium, where you can post different things and on the other hand it is very informal and without any structure – e.g. guided reflection questions, time frames you take for posting, feedback on the postings – which might be important for the reflecting process.

Conclusions

In summing up, Facebook offers potential for bridging borders between university and school. However there are some significant restrictions. Facebook could be a medium, which offers the chance to counsel a trainee during his internship and to help him in bridging the gap and crossing the borders.

Time is an important point when talking about Facebook. On the one hand, it doesn’t take much time to update one’s own status. On the other hand it takes a lot of time, if you read all your friends updates and commenting on them takes even more time. If you have about 200 friends, this would mean that about 30 of them are posting each day. Therefore it might be important for a medium like Facebook or similar ones to stay informal. Using the posts and commenting them in form of a professionlisation process could take away the informal status of Facebook as a Web 2.0 application.

In addition it is a powerful instrument. You have to be aware that everybody can read the messages and comment on them. So if there are some points you worry about, you might have to think twice, about posting them on Facebook. You have to be aware that all of your – so called – friends can read the updates. This might be a possible restriction on using the different posts of Facebook postings.

On the other hand, there are different actors involved in this process and it blurs the distance between a supervisor teacher at the university and the trainee in the internship. The informal character of Facebook offers the chance to stay in touch with other communities – in this case the community at the University-, which contributes to the process of professionlisation. This might be important for the trainee and gives him a kind of a secure feeling, that there are other peoples watching the profile and standing on his side giving hints, feedback and comments. Using the fast and informal potential Facebook is a tightrope walk and therefore in the end a question of media education.

From the perspective of the activity theory, the object of a system is very important. The object connects the individual subject to the collective activities (Engeström, 2004, p. 31). The idea of Facebook – the object – is to stay in touch with friends and not with supervisors. If you are going to change this object, you change the activity stems as a whole. Depending on the interpretation of the rules, which guide the activities in Web 2.0 platforms, there are some restrictions. One – often implicit – rule is the separation of different activities. Nearly every activity has its own platform. There are business platforms, auction platforms, dating platforms and so on. For example it is frowned upon to try to sell products on a platform, were people want to stay in contact with their friends (Zeger, 2009, p. 30). This seems to be a change of the subject and therefore a break with the rules. This break and change have different impacts on the activity system as a whole and therefore on the process of professionlisation. A break with the rules might lead to a break up of the whole network (Zeger, 2009, p. 61).

So there is a kind of dilemma. Different updates have reflective potential for a professionlisation process, but the moment you use them, you are going to give them another sense and another meaning, which might not be in the interest of the publisher. But in fact, Facebook offers some other applications – e.g. groups – which could be tested
concerning the potential of Facebook. Groups offer the possibility of fast and informal comments for the different participants, without being friends with the other members of the group. This might be a solution to walking the tightrope between friend and supervisor. Facebook and other Web 2.0 platforms are areas on the internet, were you have the chance to create your own world and to live in this own world. It is a kind of parallel universe (Zeger, 2009, p. 56) with its own rules, own objects and different understandings of communication and time, were you can give yourself the personality, in which you want to be seen. In fact Web 2.0 is one technical answer, to Goffmans idea of presenting yourself in everyday’s life (Goffman 2002) and this leads to an enormous potential of further research. Future work will address the issue discussed here with a view to ask for learning potential of different groups of Web 2.0 and the different parts people play.

References:
The role of auto-catalysis in creativity in human networks at the edge of chaos

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Abstract: We use contemporary studies of human networking roles to propose that idea generation and associated knowledge transfer can occur through auto-catalysis in human networks on a final year module “Creative Action in Organisations” delivered at Leicester Business School to 150 students. Organised typically into communities of creative learners, each community networks in a simulated chaotic environment in the classroom to complete assessments. We see similarity between our simulations with computer generated micro - biological simulations of ‘auto-catalysis’ that explain how cellular development in living organisms occurs at the edge of chaos. This paper uses auto-catalysis to develop a theoretical explanation of why human networks ‘come alive’ even in classroom simulations, as communities generate blue ocean futuristic ideas, bringing them into the realm of current technological and human capabilities. We explore this through a three year longitudinal study – with five years’ of practitioner observations for assessment purposes.

Auto-catalysis in Human Networks?
In an attempt to understand how communities of HE creative learners collaboratively generate ideas and associated knowledge transfer, our specific research question is whether human networks can exhibit behaviours similar to auto-catalysis in nature. If so, how might this work in our simulated communities of practice? There is some evidence that humans in organisations tend to self-generate multiple possibilities during idea generation, before coalescing around one dominant idea (Schon, 1971; Van de Ven, 1986; Nonaka and Takeuchi, 1995). We start with the premise that human networks are complex adaptive systems at the edge of chaos (Waldrop, 1992: p 292), and hence they behave similarly to other living organisms in nature. To support this assertion, we look at recent discoveries from computer simulations of biological processes and relate them to human networks in a classroom.

Auto catalysis is derived from simulated models of primitive metabolisms after Farmer, Kauffman and Packard (1986), who proposed that contemporary living organisms have probably evolved via auto-catalytic collaborations, when nucleic acids and proteins spontaneously reacted into ‘auto-catalytical sets’. They further assert that each member in an auto-catalytic set is a ‘product of at least one reaction catalyzed by at least one other member’ (p 50): in short ‘coupled catalytic relationships’; regenerative relationships that over time evolve via further auto-catalysis into different catalytic pathways of ‘richer substrates’ that compete to enhance the ‘concentration of some molecular species at the expense of others’ (p 62). Auto-catalysis then is a self-sustaining process, one that might illuminate how human networks also ‘come to life’ as they cooperate via self-organising relationships (equivalent to auto-catalytic reactions) to coalesce around one dominant idea at the expense of several other possibilities.

Is this then the human networking equivalent of what Farmer et al coined a ‘chemical kinetics’? This is an ongoing kinetic process with its own life-like momentum that naturally selects ‘the most efficient properties of cooperation’ to generate the ‘fittest auto-cataltical networks’ – notably ones that have led to the genetic codes of contemporary life such as DNA (1986: p 62). Pascale, Millemann and Gioja (2000, p 34) tend to confirm this by citing that organisations possess ‘organisational DNA’ - DNA that evolves with the injection of new ideas as the raw material of regeneration. More recently, Galimov (2006) also modelled a ‘navigator’ mechanism with a ‘coupling capacity’- similar to Farmer et al’s (1986) coupled catalytic relationships - that actually ‘plots’ the development of life towards increasingly ordered states of matter despite the general tendency towards disorder. How might this navigator mechanism apply to human networks involved in regenerating organisational DNA?

Split (Schism) between Mainstream and Fringe
For Pascale (1999: p 87) humans are ‘the chromosomes’ - namely the ‘genetic material’ - who generate ‘variety’ through ideas, knowledge reordering and new knowledge, and notably those on the front line are the first to interpret the ‘emergent’ threats from the environment. That threat is aimed at the current organisational DNA embedded in the mainstream of the organisation. That threat in nature could destroy the current DNA. Yet Pascale continues citing Miller of Shell (p.88), that ‘centralisation bogs us down’ due to damping feedback that preserves social order and the current DNA, whereas when warnings from the front line are seen as opportunities by the centre (mainstream),
amplifying feedback tends to occur that destabilises current DNA. Trisoglio agrees too that the front line is prime because it represents the ‘fringes’ known to ‘foster the most prolific rate of mutation’ just like its natural equivalents – the ‘verge’ on land ‘between savanna and forest’ or the ‘intertidal zone’ between ocean and land (in Pascale, Millemann and Gioja, 2000, p 31). Trisoglio continues by lamenting that the key challenge against regenerating or ‘exchanging’ organisational DNA is that mainstreams all too frequently fail to recognise when the new DNA should not remain on the fringes. This is because the damping feedback blocks the exchange of metaphorical DNA due to the ‘existing social order – equivalent to the body’s immune system’ (p 31, 32). Miller cites this as the ‘HQ versus field schism’, where this split requires bridging by new ‘parallel informal connections’ (in Pascale, p.88). This process is assisted by ‘altered conversations’ (in Pascale, p. 91) or we propose a translation mechanism. This process supports our key premise that new connections across the split produce a tension between order and disorder that is central to explaining how we might find the navigator mechanism at work in human networks.

In Search of the Navigation Mechanism in Human Networks

We posit that the ‘navigation’ phenomena is now ‘wielded by the power of human intention’ where companies are ‘self-knowing and intelligent entities’ according to Pascale et al (2000: p 33) that recognise, even anticipate, threats to their survival in advance. Hence, human networks can exercise choice - whereas the rest of nature works on chance by ‘nudging species’ thorough disturbed equilibrium ‘into arenas where chance mutations can thrive’.

Human networks are depicted as nodes and connections or relationships (Pascale et al, 2000, p 126; Lipnack and Stamps, 1982) where nodes are intentional and intelligent beings represented by psychological traits; and connections equate to self-organising informal social relationships between intentional beings - face to face and online. We first turn to ‘nodes’ and explore well-established trait literature; we then look at more recent literature on human ‘connections’ in networks. In both cases, we apply theories to our proposed conceptualisation of the navigator mechanism in human networks.

Trait Dyads and Triads between different traits

Trait literature points to change champions (Schon, 1963) whose psychological makeup drives them to exhibit certain behaviours as nodes in social systems, that are beneficial to organisations yet not in the job description; and there are five classical trait behaviours that can be seen in the typical human network: idea generators, entrepreneurial champions, project leaders, gatekeepers and sponsors (Roberts and Fusfeld, 1981: p 15)

Idea generators are often social loners but adept at generating creative solutions to difficult crises and problems – yet are often disinterested and inadequate at promoting themselves and what they know. Entrepreneurial champions are endowed with perseverance and hard-nosed determination. They tend to form dyadic relationships or ‘role couplets’ (Roberts and Fusfeld, 1981: p 19) with idea generators (problem solver/promoter dyads) that operate in a temporary and expedient reciprocating relationship on the fringe. Project leaders, who are noted for good people skills and trusted by senior management for budget control and project implementation. Gatekeepers, custodians of the existing social order, who usually do not understand the language of new ideas and for whom to the new ideas must be ‘packaged’ (Smith, 2000: p 271) in suitable language necessary for the mainstream to facilitate idea implementation. Lastly, Sponsors, enterprising directors who ‘navigate’ bureaucracy informally to enable project leaders to overcome obstacles from gatekeepers.

The traits combinations appear in human networks in a variety of forms. We have identified two combinations that might contribute to our conceptualisation of the navigating mechanism. Kilduff and Tsai (2003) refer to the processes of reciprocity (reactions in chemical terms) and transitivity (‘coupling’ in chemical terms), which are both required to generate and intentionally persuade the implementer triad and promoter dyad to bridge the divide between the mainstream and fringe in the human network. However, in order for these processes to auto-catalyse the ‘translator’ trait is required, and this allows for all the participants within a human network to buy into a common package, which has been framed around the perspectives of both fringe and mainstream. In other words, the new DNA becomes ‘mutually intelligible’ (Smith, 2000: p 271).

We have now considered the combinations of traits that may constitute the nodes driving the navigator mechanism; and pointed to at least two self–organising and emergent trait-coupling relationships: the problem solver/promoter dyads; and implementer triads (project leader/gatekeeper/sponsor). We have also intimated that the auto-catalyser might consist of the ‘translator’ trait, which actors trust, due to a bridging ability between fringe and mainstream within the human network. However, in order to explain this process we turn to recent literature on trust and connections in human networks.
Connecting role behaviours in Human Networks

The work of Krackhardt and Hanson’s (1993) on the sociogram of a ‘trust network’ helps plot connections to individuals most trusted in a network to reveal a marked centrality around just two or three individuals (nodes). Cross and Prusac (2002) explain these individuals as ‘centrally connected’ and have identified four typical networking behaviours: central connectors, boundary spanners, information brokers and peripheral specialists.

‘Central connectors’ have the most concentration of relationships inside their own network. Apart from trust, centrality applies to any network ‘value’, notably idea and new knowledge implementation. In contrast, ‘Boundary spanners’ link different networks - and are influential in translating novel information between networks to make it mutually intelligible (Granovetter, 1973; Smith, 2000). For Davenport, Prusak and Wilson (2003), boundary spanners are ‘idea practitioners’, ‘almost all’ of whom have ‘other jobs … [and] play their roles somewhat on the margins’ (62). Information Brokers ‘irrigate’ information within their own network and can be the spokesperson on behalf of the central connector. Peripheral Specialists tend to resemble the trait of the Idea Generator, choosing to be loners on the margins, in order to concentrate on research into new knowledge. These four roles are built into the simulations and acted out by our communities of learners. Each individual takes on a role, however, they become aware of secondary networking preferences: in other words, they wear multiple hats, when it comes to roles and do not engage in fixed informal behaviours. Rather they engage in ‘contextual switching from role to role’ and have ‘multifaceted’ informal capabilities better explained as ‘persona’: notably this persona is not about ‘your predetermined “business DNA”’ (Kelley, 2006: p 13). Due to the complex nature of the behaviours these learners exhibit, we now explore the more recent work on networking personas in order to finally identify the complexity behind the navigator mechanism.

Networking ‘Persona’

Kelley, of IDEO, points to ten persona, five of which could better label the Promoter dyad. The problem solver/promoter dyad on the fringe resembles the Experimenter and Hurdler persona because the experimenter ‘prototypes’ new ideas continuously and the hurdler’s perseverance ‘outsmarts’ organisational ‘roadblocks’ (p 9, 10). The implementer triad in the mainstream resembles either Collaborator or Director persona, as both bring ‘ad hoc’ and ‘eclectic’ teams together, leading ‘from the middle to create new combinations’ (p.10). The Cross – Pollinator ‘translates’ ideas from other ‘industries and cultures’ (p.10) to make new DNA mutually intelligible, akin to the boundary spanning translator, after Smith.

The Study

We will attempt to explore this phenomenon of navigator mechanism through our longitudinal study of three years on our “Creative Action and Organisations” module, where communities of learners were challenged with generating ‘blue ocean’ strategies (Kim and Mauborgne, 2005), and brought their sometimes futuristic ideas into the realm of current technological and human capabilities.

The purpose of this paper is to illustrate the processes in the industry network through a quest for the better business idea, or Blue Ocean idea. What happens when parts of the network realise that the current idea is not fit for purpose. By explaining this through networking roles and personas we were able to see the critical incidents that brought sufficient instability to the network to allow further knowledge re-ordering or search for new idea to take place.

In order to consider these critical incidents, it is vital to first explain the setting. Figure 1 presents the simple view of the structure of learning community of 20 students. Each coloured circle represents a typical section of an industry network of about four learners, which is where we are stimulating emergent properties (Bessant and Tidd, 2007, p.84).

![Figure 1. Structure of the industry network](image-url)
The groups self-organise according to their given start roles from customer (X) through to supplier (D), and all are involved in one project they select, but represent different industry roles, and hence use different approaches and resources to develop the project. What is important in this structure is the bifurcation of this network into the “mainstream” and the “fringe”. Here the mainstream part of the network will coalesce around the main Blue Ocean theme near the start of the learning process. However, the data points to much behind the scenes negotiations, mainly outside scheduled tutorial time as to discover the fitness of the Blue Ocean idea. From our three academic years of observations of students involved in this learning process as facilitator-coaches we can say that approximately third of networks change their Blue Ocean idea, namely DNA, as a result of these negotiations due to de-stabilising tension between the mainstream and fringe leading to new mutations.

The key change in the behaviours which we observed is linked to the change of roles by individuals from the centre of the network to the periphery and vice versa. From our observations this can be caused by the network ‘going down’ in search for a ‘higher fitness peak’ or idea (Pascale, 1999: p 85); by situations where knowledge re-ordering is required; or by a general search for new knowledge and ideas takes place. In these situations the “navigating mechanism” is kicked off by either one individual or a pair, who are involved in spanning boundaries between the mainstream and the fringe.

Just like in any form of human activity there is a tendency towards centrality around a few key people with others left on the fringe. The fringes in this structure (See Figure 1), i.e. the residual DNA are those whose ideas were not taken on board. These individuals and parts of the industry network seem to be dis-associated, and either fight to re-join the mainstream by planting a ‘seed of doubt’ regarding the fitness of the currently promoted Blue Ocean idea, or choose not to engage. In the former case a peripheral individual will attempt to gate-crash the mainstream and try to dominate. Is this the navigator mechanism in action?

When looking at these two parts of the network we can see the tendency of individuals from both sides to re-organise themselves around a new central connector, as the mainstream accepts the knowledge reordering process which just took place, and hence the mutation of the current DNA. To conceptualise how this process of ‘auto-catalysis’ might work with the help of the proposed navigation mechanism, we now look at this process in more detail by focussing on four critical incident situations, which are illustrated and explained below. We used videos recorded as part of the assessment through presentations and role-plays, as well as observations and focus group discussions, together with student feedback documentation to develop an understanding of what happened in the classroom.

In order to illustrate some of the key events in terms of role and persona ‘switching’ amongst individuals, and as a result the changing of the main Blue Ocean idea, we look at four critical cases we have observed. These cases represent the processes within individual circles from Figure 1 – namely in group of customers, marketers, main Headquarters of the company launching the Blue Ocean idea, product designers and suppliers. We will use quotes from the focus groups to illustrate the change in roles observed, that we propose is as a result of the “navigation mechanism” that takes over with the aim to re-define the current learners’ network.

**Case 1. Initial brainstorm and emergence of mainstream – forces pushing centrality in the network.**

In this case the key idea generator (P1) in Figure 2 is pushed through social obligation to take the central connector role and hence become the mainstream opinion leader. This particular observation takes place in the first session with students, and what we see is that the person who best understands the Blue Ocean idea tends to be pushed into the leadership role; and hence become the representative of this smaller network in a larger one presented in Figure 1. This also means that an idea generator becomes the overall leader of the larger industry network.

A quote from the focus group confirms the emergence of the mainstream, as well as illustrates the rationale for a particular person to become the network leader:
"...you bring the idea forward, and people automatically assume you’re the overall leader as well as the group leader and no one actually made any suggestions. Just because I came up with the idea they thought... we’ll let him do it. Others then rely on you and don’t put much effort into the work.” [P1]

In order to ensure that tasks are carried out by the group and by the overall network, P1 will need to develop a rapport with other learners in his network as well as other leaders in a larger industry network via direct communication illustrated in Figure 2, and these individuals will trust his/her judgement. On a number of occasions we have observed that these overall leaders were involved in keeping the current DNA of the group in a stable position, or keeping the status quo.

“you feel the opposition, but you are the person who came up with an idea, and you don’t want to upset anyone” [P1]

This example illustrated the process of leader emerging and as a result the mainstream emerging in the large industry network.

Case 2. Scouting into fringe by the mainstream

This example takes place when the industry network feels that the current Blue Ocean idea is not something they want to work on. Figure 3 illustrates this process of scouting by a leader in the group P2 for better idea (search for highest peak). This process means that P2 has to change persona and approach in order to operate on the fringe; listen and collect as much information as possible; and then return back to the mainstream with the revised or completely new idea. We support this with a quote from the focus group discussion:

“I think you forget that your group seems open minded; your group has very quickly accepted this doesn’t have to happen but I think, I mean there’s definitely one member in my group and one member in the opposite group, it seems like they’re in the opposite group, who definitely still don’t understand completely the idea that it doesn’t have to work, don’t have to do it, we’re not going to go and sell it.”[P2]

Looking at this example, it is clear that in order to ensure that everyone is involved in the development of the Blue Ocean idea, the leader P2 has to go out and understand the flaws within the current idea from the point of view of the periphery. Hence the leader goes on a scouting trip for a better idea which will be accepted by the network. Here the role of the participant P2 changes from being a Central Connector to a Boundary Spanner. In order for the new idea to gain credibility, this idea needs “translation”. The individual has to come back and hard-sell this new idea in order to navigate it into the mainstream and create a new DNA for the mainstream.

“we had a chat and it took me ages to get it across to my group what it was and I still don’t think they’ve really got it. I still don’t think a couple of them get it.”[P2]

The reason why the Central Connector keeps their role is because they already have centrality or social credibility, which allows them to translate and be heard regarding why the change is needed and they can do it better than say a new idea generator.
Case 3. Gate-crashing of the Mainstream by the Fringe
Following the previous example of scouting, there might be an alternative path whereby the new idea is navigated into the mainstream. If the tension between the parts of the network leads to amplifying behaviour and confusion, because the social structure gets upset and voices of those on the periphery were not heard, then a new central connector emerges and changes the connections.

“We had quite a weak team; we didn’t really say anything or make any decisions and then we had another guy that came into our group late, who actually had some quite good ideas, which changed the dynamics of the group. Now all of a sudden, you’re finding that people are trying to brush up what they never used to care about.” [P2]

This process is illustrated in Figure 4, where we can see the redistribution of relationships around the newly emerged central connector. In this critical example, when mainstream tries to hold on to the idea which the fringe in the network sees as a weak idea, the learners in the fringe start a revolution and throw away the current idea and navigate a new idea in to replace the weak idea.

“We ended up changing our idea because the first one, like people agreed with it, everyone agreed with it and then they weren’t sure what they were agreeing with” [P3]

In figure 4 we see how P3 person from the fringe has to hard-sell the idea to all the participants, and by doing so the centrality within the network moves to this P3 person who started the change. Notably, P2’s earstwhile centrality is pushed to the margin along with the weak idea.

Case 4. Deliberate avoidance from being the central connector

Figure 5 shows the critical incident where the navigator mechanism is put into action. This example is not about the change of idea, but about how a navigation mechanism can plot a successful way forward by hidden centrality emerging around the real leader P4.

What we observed over three years with our networks of learners, is that in some cases the leaders that are known to the industry network P2, and that represent the group roles in the mainstream, may not be the key people that lead the groups.

We have evidence to suggest that in some situations the reason why the group network operates well has nothing to do with the person that generated the idea and hence was pushed into the leadership role. The hidden centrality within the group network allows for those that do not want to be known as the leader to shine, and use their skills in managing the group under the umbrella of the leader.

As one leader said at the focus group:

“But who do I talk to? They know who the leader is... me... but they don’t know that it is Joe that does most of the work...” [P2]

The second in command [P4] did most of the leading in a group by:
"I did not want to be a leader...but I swear I had to explain not only what our group was actually doing but I had to explain the module to the group two or three days before, even leader did not know! What’s interesting is, once that happened and once I finally made sure that everyone was clear what was going on, they grasped it and then everything went well, but they still all came to me to clarify things, so I was sort of doing about 80% of the work..."[P4]

These four cases illustrate some of the properties required for the navigation mechanism proposed in the paper to start, and in some case complete, the transformation of the idea and as a result the mainstream DNA of the industry network. We now conclude this paper by not only looking at what has been discovered in this study, but also by identifying areas for future research.

Conclusion
In conclusion, whilst in nature organisms survive bacterial and virus infections by reproduction - whereby DNA constantly renews its immune system to reach a higher fitness peak – the case of ‘organisational DNA’ is more complicated by the structures of vested interest borne of human intentionality to preserve the current DNA that ‘works’ (if it ain’t broke, don’t fix it). This prevents self-organised renewal of its immune system to reach higher fitness peaks because the mainstream tends to resist new ideas such as a blue ocean – seeing them as viruses to be blocked. This is where the damping mechanism instils equilibrium: in organisational terms this means as Pascale (1999: 86) cites “stable equilibrium equals death”.

Imagine however, nascent human networks with no superimposed hierarchy, namely our simulated industry networks with no hierarchical start conditions in the classroom. So what persona, representing the ‘genetic material’ of our posited navigator mechanism, might generate destabilising ‘variety’ through ideas, knowledge reordering and new knowledge? Over the last three years we have observed auto-catalysis occur in eight out of twenty four communities of learners after a perfectly workable blue ocean idea has already been generated. This is due to networks self-organising to seek a higher fitness peak after the network became intentionally de-stabilised by some of the actors, either from the mainstream or from the fringe. From our research we propose tentatively that the navigator mechanism consists of the Cross-Pollinator persona combined with the boundary spanning behaviour with a high level of trust within the network. This persona has a high ability to translate new and re-ordered knowledge to all actors in the network, and interprets this knowledge in a mutually acceptable frame for all actors whether at the fringe or in the mainstream.

As the dyads and triads reformulate, as we observed, unfortunately, for some of those involved in the process of re-defining the DNA of the network, their roles become redundant. This process challenges facilitators of the module in terms of casualties of the process, just as in Case 3 – ‘Gate-crashing the Mainstream by the Fringe’ – because as a result engagement can cease. In the modern classroom this is amplified by the cross-cultural nature of these communities of learners, and has implications of major support mechanisms being required by the facilitators to ensure a satisfactory learning experience. This will be a focus of the future study based on the data collected so far.

A more critical question that arises from this research, apart from ethical and other considerations is linked to whether networking experience is a valuable learning medium. The feedback from the students confirms this is a valuable skill for both employment and self-employment at this final undergraduate level, however, it is not everyone’s cup of tea. From the facilitators’ perspective, it is evident that the key intangible skill learnt on this module is the ability to understand the complexity of the personas individuals exhibit whilst generating new knowledge and re-ordering old knowledge; as well as the challenges of translating the tension which suddenly emerges between fringe and the mainstream. A part of this complexity can be explained by the proposed navigator mechanism, however further research is needed to establish our concept in empirical terms in educational research.

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How to Bridge the Gap between Academic and Corporate World?

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Business schools pursue to intensify cooperation with the corporate world and governmental institutions and aim to develop long-term, intensive relationships with existing and new businesses in the areas of education, research and labour market perspectives. Examples of cooperation are guest lectures by company CEOs, mutual development of cases and education material, internship opportunities and traineeships. More and more there is also interest in cooperation on research topics. Last but not least, there is a growing demand for career services, preferably in harmonisation with the corporate world.

As an example the Maastricht University School of Business and Economics is, in cooperation with the corporate world, working on an extended masterproject. This involves learning projects that pay attention to not just the core disciplines, but also to academic skills such as presentation techniques and analytical skills.

In this workshop we will exchange good practices on the cooperation between the university and the corporate world. We will start with a brief overview of how it is planned and organised at the Maastricht University School of Business and Economics, and afterwards discuss alternatives and best practices. The aim is to exchange views and experiences.

Question which could arise are:
What is the most convenient way to build and structure the relationships? How should this be organized? Does the best structure depend on the different purposes of the relation? Is there one best way of organizing?

And further: who is to be responsible?
Are there best practices that state that members of the academic staff should be the key persons for faculty to turn to with regard to business contacts, and are they the ones to support faculty in starting and maintaining business relationships? Or should it be a task for the Board members of the faculty? Or should there non-academic staff be responsible for business relations and career services? And how to manage the engagement of all parties involved?

The aimed outcome of this session is to have a broader view on how to bridge the gap between academic and corporate world.
Social relations in the classroom and their power for learning

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Abstract: To what extent do learners inside and between teams share knowledge? The main contribution of this work is to analyze the classroom as a place where small working teams work and learn together and co-construct knowledge. We propose that the transfer of knowledge between students occurs not only through the work they are doing in their small teams but also through the activities all teams actively share in the larger physical and virtual classroom. These inter-team relations should reinforce the socio-cognitive processes taking place inside each working team. So, the social learning space will reinforce each team’s socio-cognitive factors and create a knowledge-sharing environment that will improve learning.

Main goal of research
The main goal of this research is to understand intra-and intergroup learning behaviour in a blended learning environment. Small working teams construct (shared) knowledge and try to reach successful collaboration in their social learning space. We want to know if knowledge is really transferred among learners (individual students and small working teams), how this transfer occurs inside and between teams and if this process is influenced by the social learning space that learners actively shared within the classroom:

Learning in teams
In recent years collaborative learning has been granted as one of the options to obtain better learning outcomes (Dochy, Segers, Van den Bossche, & Struyven, 2005; Häkkinen & Järvelä, 2006; Kirschner, Beers, Boshuizen, & Gijselaers, 2008). Groups of learners are increasingly acknowledged as the source of knowledge construction (Lindblom-Ylänne, Pihlajamäki, & Kotkas, 2003; Roschelle, 1992; Roschelle & Teasley, 1995). Collaborative learning environments enrich learning through interaction and therefore obtain better performance on the ascribed tasks than traditional learning environments. In this process Information Communication Technologies (ICT) have increased the possibilities to support collaboration, opening the door to Computer-Supported Collaborative Learning (CSCL) (Häkkinen & Järvelä, 2006; Jonassen & Kwon, 2001; Kirschner et al., 2008). However, research in CSCL and collaborative learning in general shows that the potential effectiveness of group learning is not always reached (e.g., Barron, 2003, Jonassen & Kwon, 2001, Van den Bossche, Gijselaers, Segers & Kirschner, 2006).

The two primary perspectives on collaborative work and learning are cognitive and social (Olivera and Straus, 2004, Roschelle & Teasley, 1995). The cognitive perspective stresses the influence of team work on cognitive processes. The social perspective examines the social factors constituting successful performance in teamwork. This means that the identification of the social conditions under which teams make this effort to reach shared knowledge is an essential prerequisite for developing enhanced understanding of successful collaboration. As Van den Bossche, et Al. (2006) state, viewing collaborative learning as reaching mutually shared cognition, and thus as fundamentally social, stresses the need to take into account the social context in which these processes take place. In other words, Van den Bossche et al. (2006) have developed a theoretical framework for conceptualizing learning in collaboration that entails both an understanding of how socio-cognitive processes give rise to cognitive development and an understanding of the social, interpersonal dimension of teamwork. The team learning model specifies when and how teams in collaborative learning environments engage in building and maintaining mutually shared cognition, also referred to as shared mental model (Van den Bossche et al., 2006). Research on shared mental models has highlighted that team who develop a shared mental model perform superior than other teams (Van den Bossche et al., 2006).
This paper presents an integrative perspective, building on the strengths of different research strands. It includes both the learning behaviour of the team and conditions in the interpersonal context that contribute to engagement in the development of mutually shared cognition practices. So, the learning behaviours that positively influence the development of this mutually shared cognition are the co-construction of meaning and the constructive conflict in the interaction of the team. Besides, this research focuses in the beliefs about the interpersonal context which influence this team learning behaviour. The group-level beliefs that potentially affect the learning behaviour are psychological safety, cohesion, potency and interdependence. Thus, this research states that "the identification of the social conditions under which teams make the effort to reach shared knowledge is an essential prerequisite for developing enhanced understanding of successful collaboration" (Van den Bossche et al., 2006, page. 497). But, as Webb and Palincsar (1996) noted, few researchers have investigated these kinds of social factors that influence team learning in educational settings.

Proposition 1: Effective teams are able to create the right social and cognitive environment, fostering the development of a shared mental model.

Learning inside and across teams: a common learning space

The socio-cognitive processes through which members of a team collaborate in class do not occur in a vacuum but are influenced by the social context in which they take place (Keyton, 2000). The social context affects the certain learning space: a place where the agents in the learning process, teachers and students, are together; in a collaborative classroom which nourishes the willingness to engage in the (joint) effort to build and maintain mutually shared cognition (Barron, 2003; Crook, 1998). Within educational psychology, limited research has been conducted in order to assess whether (sub)teams in a classroom-setting also learn from the experiences of other teams in their class and what the underlying mechanisms for these learning spaces are. However, this capacity of a space to improve agent’s outcomes is well studied for firms and its innovation process, in a stream of literature related with regional economics. This strand of research can provide insights to study learning across teams.

When the determinants of innovation are studied, the so-called “intra firm” determinants of innovation are considered the main explanations of different innovations performances, specially the size of the firm appear to be the most important (Acs & Audretsch, 1993; Audretsch & Vivarelli, 1996; Pavitt & Townsend, 1987; Rothwell, 1989). However, the empirical results of these studies identified small firms as much more innovative than bigger ones. These contrasting results underline the need for introducing other explanatory variables vital for fostering the innovation process. In some recent literature (Acs, De la Motthe & Paquet, 2000; Anselin, Varga & Acs, 1997, 2000; Adretsch & Feldman, 1996; De Groot, Nijkamp & Acs, 2001; Feldman, 1994; Feldman & Audretsch, 1999) much emphasis has been put on determinants that are external to the firm to explain innovative capacity. These external factors are named “knowledge spillovers” and refer to positive influences that firms received in terms of knowledge from the environment in which they operate. As Gerosky (1995) underlines, the proximity to other firms can be essential in increasing the innovation capacity of a firm independently of internal firm characteristics. There is an agreement in literature on the fact that physical proximity among firms plays a crucial role in improving their innovative capacity. Space matters because of the existence of knowledge spillovers but this space is not only physical but also made of all the different relationships built among local actors. Capello (1999) and Capello & Fagian (2005) describe how influences from outside the firm (from the local environment) foster the innovative process developed by a firm. So, following Capello & Fagian (2005) the precondition for the creation of knowledge spillovers is the cultural proximity of economic local actors, i.e. their sense of belonging to the geographical area, their capability of interacting and the sharing of common values. This cultural proximity is the basis for the existence of explicit and implicit cooperation among actors and public and private partnership.

The main contribution of the present study is to combine the findings of shared mental models in team-based research with the concepts of knowledge spillovers between learners, which are drawn from research on regional economics. In other words, we want to offer a theoretical framework to analyze the classroom as the place where small working teams develop their social and learning exchanges. In Figure 1, the development of a shared mental model within teams and the development of knowledge spillovers between teams are illustrated using social network analysis techniques (Hurme, Palonen, & Järvelä, 2007; Wassermann & Faust, 1994). Team 1 consists of five members who learn and work together on several tasks, which is represented by the five actors and their links. In order to effectively learn from each other, the five members of the team have to focus on both the cognitive and social processes in order to develop a shared mental model (Barron, 2003; Van den Bossche et al., 2006). Teams who effectively establish a shared mental model are illustrated by the circle around each team in Figure 1. The new element in our research is that teams not necessarily learn in isolation in a classroom. In fact, learners in a classroom...
naturally interact or link with their peers outside their team, which might lead to knowledge spillovers from Team 1 to Team 2 or to Team n. These inter-team relations, based on daily personal contact and learning interaction should reinforce the socio-cognitive processes taking place inside each working team. We propose that the transfer of knowledge between students occurs not only through the work they are doing in their small teams but also through the activities all teams actively shared in the classroom. So, we argue that the social and learning space in a classroom is able to reinforce each team’s socio-cognitive factors and is able to create a knowledge-sharing environment that will improve learning.

Figure 1 Shared Mental Model and Knowledge Spillover.

Proposition 2: In addition to interacting within a team, learners are also interacting with other learners outside their team, which will enhance knowledge spillovers across teams.

Learning inside and across teams in blended learning

Recent research has highlighted that ICT tools like discussion forums, online lectures of WIKIs can enhance the learning experiences of students in class (Jonassen & Kwon, 2001; Schellens & Valcke, 2005; Rienties, Van Wesel, & Gijselaers, 2008). One of the main (assumed) advantages of using ICT in education is that learners can learn in a flexible and challenging manner. In addition, the developments of ICT in the last years are so rapid that currently several ICT tools offering rich blended classrooms can be used by teachers and students to learn in a challenging and interactive manner (Cho, 2002; Hurme et al., 2007; Rienties, Van Wesel, & Gijselaers, 2008; Tempelaar, Rienties, & Giesbers, 2009). For example, at Maastricht University in a course E-business and E-Economics students were assisted in their learning process when they were not physically at the university by using discussion forums. Students in the intervention cohort were more satisfied with their learning processes than students who did not use discussion forums (Rienties et al., 2008). A similar finding was found by Arts and colleagues (2002) and Schellens & Valcke (2005), who used discussion forums to allow students to discuss cases in small teams to extend the learning experience from the classroom to a blended learning setting. As a result, in Figure 2 the integration of the blended learning space with the face-to-face learning space is illustrated. Figure 2 illustrates that some teams actively use the online setting to share knowledge within their team, as for example Team 1 and Team n, which has been found previously in other blended-learning courses (Caspi, Gorsky, & Chajut, 2003; Rienties et al., 2008; Schellens & Valcke, 2006). At the same time, some individuals are more active in online settings than in face-to-face settings (Hills & Argyle, 2003; Scealy, Phillips, & Stevenson, 2002).
Figure 2 Shared Mental Model and Knowledge Spillover in a blended learning environment

Proposition 3: Extending the learning space from a face-to-face environment to a blended learning environment will lead to more knowledge spillovers.

Proposition 4: The extent to which teams use the online settings for knowledge construction is explained by the degree in which teams have developed a shared mental model

Method

Setting
This study takes place in an elective 3rd year course of Business Administration in the Economics Faculty at University of Oviedo. The aim of this course is to introduce students in international economic relations. The participants are between 100-120 Spanish and Erasmus students enrolled in this course. The students are assumed to meet twice a week, in two-hour session, during 14 weeks period. The course uses a blended learning approach with collaborative learning methodology, combining whole class work with team work. The working teams have to solve five authentic tasks related with international economics. These working teams consist of five members, who are self-selected by the students themselves. The instructional design offers the teams several opportunities to share knowledge. Intra-and inter-team interaction tools have been planned both in the face-to-face and in the online environment. Table 1 summarize the elements of the instructional design that promote the different types of teams’ interactions.

Table 1 Teams’ interactions and learning environments

<table>
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<tr>
<th>Interaction Type</th>
<th>Face-to-face Environment</th>
<th>Virtual Learning Environment</th>
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<tbody>
<tr>
<td>Intra-team</td>
<td>Class time devoted to team working: teams work on their own elaborating materials, reading and summarizing, discussing…</td>
<td>Private team forum Wiki to develop specific written assignments Feedback and corrections through the forum</td>
</tr>
<tr>
<td>Inter-team</td>
<td>Class time devoted to whole class work: presentations, discussions, analysis and assessment of other teams’ products…</td>
<td>Task-specific forum to discuss about tasks and analyse and assess other teams’ products. Feedback and corrections through the forum</td>
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In the face-to-face setting, during the class time, each team could reach mutually shared cognition in the moments devoted to team work, when the teams work on their own on the different tasks. The inter-team exchanges in the face-to-face setting could happen in the moments devoted to whole class work: presentations, discussions, questions asking and answering, analysis and assessment of other teams’ products. Besides the face-to-face, the online environment serves as support and collaboration tool for teams working. All important information about the subject and the working plan are available using the Virtual Learning Environment (VLE, Campus Virtual in Moodle). The intra-team interaction in the VLE is canalized through team private forum and Wikis. Some tasks are provided with a Wiki so teams can collaborative writing assigned papers or presentations. The use of a wiki tool is a big help to introduce comments and corrections about a work in process and assist teams in their co-construction processes. The learning across teams in the VLE is promoted through task-specific fora. These are general fora where all team members can participate and make possible to discuss about the different tasks, ask doubts and propose solutions and share information between teams. This design tries to resemble the face-to-face setting, where there are moments for collaborative teams to work on their own and moments for the whole class to work all together (see figure 2). The online tools are also an important element to provide feedback. So, electronic means of communication available on the VLE are used to return corrections and comments both about the final quality of the products but also about the discussion and construction process. Thus, special emphasis is placed by the teacher on ways to improve the tasks, focusing on process rather than content. Once the tasks are finished all working teams can analyse the products from the other classmates both by presentations to the whole class and through the VLE.

So, each working team elaborates and actively construct their knowledge in the face-to-face sessions and in the VLE. Normally the assigned activities are presented, explained and began in the physical classroom and then continued through the online tools. During all type of interactions, students are supposed to actively construct knowledge together in collaboration and both settings become the common learning space for all teams.

Instruments
Before the course started participants’ motivation was measured by an instrument developed by Pintrich and de Groot (1990), the Motivational and self-regulated learning questionnaire (MSLQ). This questionnaire comprised 31 questions to measured intrinsic and extrinsic motivation, task value, control of learning, self efficacy and test anxiety. The questionnaire was answered by the students several times: the studied group (group 1) answered the whole questionnaire one time and four times only the items related with intrinsic and extrinsic motivation (Moments 1 to 5). The control group (group 2) answered also the whole questionnaire one time and two times intrinsic and extrinsic motivation items (Moments 1, 3 and 5).

Group 1 was the class which uses a blended learning approach with collaborative learning methodology, combining whole class work with team work. For testing the characteristics and evolution of the working groups, the Team Learning believes and behaviour questionnaire (TLB), developed by van den Bossche et al. (2006). This questionnaire comprised 40 items divided in four categories: interdependence, social and task cohesion, psychological safety, group potency, construction and co-construction of knowledge, mutually shared cognition, conflict and effectiveness. Group 1 students answered it three time along the course in moments 2, 4 and 5.

Results
Some of the results related with motivation and the team learning behaviour are presented in this preliminary version. In the near future, the statistical study is going to be widened to test the above formulated proposition. The results are going to be analyzed from different perspectives. First, we are going to compare the two classes from the point of view of motivation. We want to know if the students from both classes have the same motivation profile at the beginning of the course. Second, the motivation of the students is going to be compared throughout the course. The aim is to know how the motivation has developed over time in both classes. Third, we are going to analyze the team learning behavior in group 1 in which collaborative learning has been applied.

Comparison of motivation between classes
Next, the means of the different scales in the MSLQ of Pintrich and de Groot (1990) questionnaire are going to be compared using an independent sample t-test. In both groups, the students answered at the beginning of the course the same questionnaire. The two groups showed no statistically significant differences with respect to motivation as can be seen in table 2. On average, the students are not statistically significantly different for any of the MSLQ scales. With respect to intrinsic and extrinsic motivation before the start of the course, no statistically significant differences were found. So, from a motivation point of view the students in both groups are, on average, equal. There is not any significant initial difference between them.
Table 2: MSLQ results for both groups

<table>
<thead>
<tr>
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<th>Group 1</th>
<th></th>
<th>Group 2</th>
<th></th>
<th>t-test difference</th>
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<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
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<td>ControloflearningM1</td>
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<td>TestanxietyM1</td>
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<td>1.29760</td>
<td>4.2621</td>
<td>1.34706</td>
<td>-.628</td>
</tr>
</tbody>
</table>

Notes: Independent sample t-test (two-sided) of the group class 1 (n=59) versus group class 2 (n=29)

Development of motivation over time
The Pintrich and de Groot (1990) motivation questionnaire have been passed to students in several different moments along the course. So, it is analysed if the intrinsic and extrinsic motivation of students has changed in the groups over the period. It seems that along the period, the intrinsic motivation has not statistically significantly changed in group 1. Comparing the means of the different moments when the questionnaires have been answered by students, with a related samples t-test, no statistically significant differences are found.

Extrinsic motivation, for group 1, present a significant reduction between moments 1 and 3 (t=2.419; p=.019) and 1-4 (t=2.506; p=.015). In relation with group 2 there are no statistically significant differences over the periods either in intrinsic or extrinsic motivation.

Table 3: MSLQ results for both groups

<table>
<thead>
<tr>
<th></th>
<th>Group 1</th>
<th></th>
<th>Group 2</th>
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<td>-</td>
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<td>.68048</td>
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<td>IntrinsicM1-M4</td>
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<td>IntrinsicM1-M5</td>
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<td>ExtrinsicM1-M2</td>
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<td>1.33953</td>
<td>1.508</td>
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<td>2.506*</td>
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<td>2.41697</td>
<td>.411</td>
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Notes: Related sample t-test (two-sided) of the group class 1 (n=59) in moment 1 versus 2, 3, 4 and 5 and group class 2 (n=29) in moment 1 versus 3 and 5. *significant at the 0.10 level

Team behaviour and its development over time
In group 1, collaborative learning methodology has been used. To analyse how the groups have engaged in building and maintaining mutually shared cognition, the Team learning Behavior questionnaire from van den Bossche (2006) have been used. In next table, can be seen that along the period the task cohesion has decreased along the period as the mean difference between period 2 and 4 and 2 and 5 are statistically significant. The same could be said about conflict: it has increased as the mean difference between period 2 and 4 and 2 and 5 are statistically significant.
<table>
<thead>
<tr>
<th></th>
<th>Mean difference</th>
<th>SD</th>
<th>t-test difference</th>
<th>Sig. (2-tailed)</th>
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<td>.92324</td>
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<td>SocialcohesionM2-M5</td>
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<td>.510</td>
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<tr>
<td>TaskcohesionM2-M4</td>
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<td>TaskcohesionM2-M5</td>
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<td>.081*</td>
</tr>
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<td>-.23684</td>
<td>1.13867</td>
<td>-1.570</td>
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</table>

Notes: Related sample t-test (two-sided) of the group class 1 (n=59) in moment 2 versus 4 and 5. *significant at the 0.10 level

References and bibliography


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How Choose Students their Learning Tools, when Studying in a Blended Learning Environment?

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Abstract: In the teaching of introductory statistics to first year students in the international programs economics and business, the Maastricht University uses a blended learning environment that allows students to attune their use of available learning tools to personal preferences. In the framework of national and European projects directed at the improvement of transition of (international) students entering university, a blended learning environment has been designed to accommodate heterogeneity in statistical mastery of inflowing students. Of its components, the e-tool is most explicitly aiming to help the students in need for opportunities to practice: the adaptive diagnostic entry test, repeated formative assessments, and practice material steered by the outcomes of the assessment mode, allows adapting to the individual level of students. The blended learning environment consists of small-group tutorials designed according to problem-based learning principles, a sequence of overview lectures and seminars, independent learning based on learning goals set in tutorial sessions, and an electronic learning environment: the adaptive e-tutorial ALEKS. Participation in tutorial sessions is required; the usage of other components can be set according to individual preferences. In this presentation, we will focus on student background characteristics, such as learning style preferences, metacognitive abilities, academic motivations, and subject attitudes variables, that influence the intensity of the use of the e-tool, using data of 2500 students taking this course in three subsequent cohorts. We conclude that the adaptive e-tutorial not only supports students with weaker statistical background, but also less academically prepared students: students with a preference for surface learning above deep learning, students for whom the learning depends on the presence of a stimulating learning environment, students low in self-concept and students low in subject attitudes as affect, value and perceived cognitive competence, are those who profit most from using the e-tool.

Introduction
Metacognitive abilities are an important determinant of learning effort, both with regard to estimated or perceived effort, and to actual (measured) effort (Efklides et al., 2006). At the same time, social-cognitive theories on self-perceptions of intelligence indicate that different implicit theories correspond to different views on the role of effort in learning. According to Dweck (1999), people develop self-theories at a very young age. Self-theories are meaning systems, mostly implicit in nature, about their personal attributes. These views about the self can take radically different forms. Dweck distinguishes the concept of entity theory, that assumes intelligence to be a fixed, nonmalleable traitlike entity, and the concept of incremental theory, where intelligence is portrayed as something that can be increased through one’s efforts. Connected with both views on the nature of intelligence, are views on the role of effort in learning. The entity theorist will regard effort as a negative thing, since it signals a lack of intelligence, being of fixed size. In contrast, the incrementalist will regard effort as a positive thing, since it is the only means to increase intelligence.

In this empirical study, we combine the social-cognitive model on the role of effort in learning (Dweck, 1999) with cognitive conceptions based on metacognitive research (Efklides et al., 2006). We do so by investigating the relationships between self-perceived effort in learning, measured effort in learning, and learning outcomes, with a range of self-report measures related to achievement motivation, implicit theories about intelligence, and metacognition, of students learning mathematics and statistics. The prime focuses of the study are the investigation of both the dependency of metacognitive self-perceptions on implicit theories, as well as the explanatory power of metacognition for subject specific achievement motivations, which in their turn explain effort and performance. Implicit theories are measured with scales developed by Dweck (1999). Students’ metacognitive abilities are operationalised by the recently developed self-report instrument Awareness of Independent Learning Inventory (Elshout-Mohr et al., 2005; Tempelaar, 2006), that presumes metacognition to be a three dimensional construct, comprising knowledge, skills, and attitudes. Expectancy-value models form the basis of an instrument measuring
achievement motivations and self-perceived effort (Schau et al., 1995; Tempelaar et al., 2007). Schau’s version of the modern expectancy-value model distinguishes two expectancy factors dealing with students’ beliefs about their own ability and perceived task difficulty, a construct expressing subjective task-value, an affective task-related attitude, and the constructs of interest and effort. Both achievement motivations and self-perceived effort are measured both before and after the learning task, to observe developments during the learning episode. Actual effort is generated as log-data by an electronic tutorial system used in the course as a replacement of practicals, and thus measure a specific component of students’ learning efforts.

The relationships are investigated using structural equation modeling, assuming a causal structure amongst measured constructs (see Figure 1).

Dweck’s implicit theories of one’s intelligence & Prior knowledge in statistics and mathematics
⇒ Views on the role of Effort in learning (Dweck)
⇒ Self-Determination Theory: intrinsic and extrinsic motivation (AMS)
⇒ Learning orientations (Learning Styles model Vermunt)
⇒ Goal orientations(Dweck, PALS)
⇒ Learning conceptions (Learning Styles model Vermunt)
⇒ Metacognitive knowledge, skills, and attitudes
⇒ Cognitive processing strategies & metacognitive regulation strat. (Vermunt)
⇒ Ex-ante expectancy-value based subject specific achievement motivations
⇒ Ex-ante (planned) learning effort
⇒ Measured learning effort (in practicals, in BB e-tool)
⇒ Ex-post expectancy-value based achievement motivations
⇒ Ex-post self-perceived learning effort

Figure 1. Chain of hypothesized causal relationships

Methods
Context
This study is based on the investigation of three cohorts of first year students in the programs business and economics. In total, these three cohorts contain about 3000 first year students, amongst them 68% of international students. The program is offered in a blended-learning environment, with the main instructional tool being small-group tutorials designed according problem-based learning principle, having a strong focus on student-centered learning. Participation in tutorials is required. Additional & optional are a sequence of overview lectures and seminars, and participation in ‘practicals’. Those for statistics are based on the e-learning environment Aleks, an adaptive tutorial.

Effort data are of two kinds: self-perception data, both ex ante and ex post, that refer to the complete course, and measured data (connect hours), that refer to statistics practicals only (so a small component of the course). Doing practicals is especially beneficial for students who lack prior knowledge, and/or experience methods courses as difficult. Therefore, data on practicals are not representative for the whole course.

Instruments
Dweck’s self-theory of intelligence and effort views. Dweck’s self-theory of intelligence distinguishes between two polar types of student beliefs: Entity Theory, the view that intelligence is something one cannot change, and Incremental Theory, the belief that intelligence can be increased through effort and persistence. Dweck & Blackwell hypothesize that implicit theories determine how students view effort. In the entity-theory framework, (the need for) effort signals low intelligence, thus effort is viewed as a negative thing. In the incremental-theory framework, effort is the cue to learning, to enlarging one’s intelligence, and thus viewed as a positive thing.

Vermunt’s Learning styles model composed of four components:
Learning Orientations: students’ learning related attitudes and aims: Personally interested, Certificate directed, Self-test directed, Vocation directed, Ambivalent.
Learning Conceptions: students’beliefs and views on learning: Construction of knowledge, Intake of knowledge, Use of knowledge, Experience Stimulating Education, Cooperative Education.

Cognitive Processing Strategies and Metacognitive regulation strategies are hypothesised to distinguish deep learners (deep strategies, self-regulation), stepwise learners (stepwise strategies, external regulation) and undirected learners.

Goal setting. Grant & Dweck (2003) Goal instrument, distinguishing Outcome performance goals: goal of wanting to do well on a particular task and Ability performance goals: goal of seeking to validate one’s ability. Both Outcome and Ability goals allow a Normative version (wanting to perform better than others) and a Non-normative version (absolute standard). Learning goals with & without explicit challenge-mastery component. Next, the Revised PALS was administered.

Academic Motivation Scale. The AMS (Vallerand et al., 1992) is based upon Ryan and Deci’s (2000) model of intrinsic and extrinsic motivation. There are seven subscales on the AMS, of which three belong to intrinsic motivation scale and three to extrinsic motivation scale.

Subject achievement motivations. Based on Eccles’ expectancy-value theory, the instrument measures six expectancy or value related subject attitudes.

Statistical analysis
Model integration is based on self-regulated learning / 3P model conceptions. Thereby, the chaining (ordering) of sub-models based on: Relative stability/context specificity of constructs (onion model of Curry); Generic vs subject specific construct; and Timing of surveys (only ex post expectancy-value constructs). Since the data are not longitudinal, no feedback loops as in self-regulation model can be estimated. Conservative model building: inclusion only for p<0.0001 (****). Gender split-sample used for investigating model structure invariance.

Results
Chain 1: Implicit theories and effort views
In the first chain, as hypothesized, the Entity and Incremental views are strongly negatively related (be it that they do not collapse into one scale). The incremental view of intelligence is positively related to viewing Effort as a Positive things, and Entity Theory with viewing Effort as a Negative thing, as hypothesized, be it relationships are not very strong (see Figure 2).

![Figure 2. 1st chain](image)

\[ \text{EffortPositive} = 0.34 \times \text{IncrementalTheory} \]
\[ \text{EffortNegative} = 0.41 \times \text{EntityTheory} \]

Chain 2: Academic motivations
In the second chain, the extent to which academic motivations can be explained out of the two effort views is made visible (and implicit theories, but they do not enter the model). Positive effort view is the dominant predictor. Components of intrinsic motivation are strongly correlated. Also: different degrees of extrinsic motivation are strongly correlated. Third: intrinsic motivation and extrinsic motivation are positively correlated, be it much weaker than the correlations within each category. Amotivation demonstrates mixed correlations (see Figure 3).
Chain 3: Learning orientations

In the third chain, the learning orientation ‘out of personal interest’ is a pure mixture of academic motivations. Being certificate directed, self-test directed, and vocation directed, are all a mixture of a positive effort view, and primarily Introjected and Identified Regulation. The Ambivalent learning orientation combines Amotivation with Viewing Effort as a Negative thing, and not as a Positive thing. Of all intrinsic motivations, only ‘To Know’ enters the model (see Figure 4).

Figure 3. 2nd chain

Chain 4: Goal orientations

In all Goal orientation specifications (PALS, Dweck, Dweck & Blackwell), the view that Effort is a Positive thing, and the Introjected Regulation scale out of Academic motivations, are dominant predictors of goal setting behavior. The Challenge-Mastery learning goal behaves rather differently (see Figure 5).

Figure 4. 3rd chain

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Chain 5: Learning conceptions

Out of the different goal orientation specifications distinguished in the model, the PALS Mastery Goal is strongest in explaining learning orientations. In two orientations, Intake of Knowledge, and Cooperative learning, the Ambivalent learning conception is important (see Figure 6).

Chain 6: Metacognitive abilities

The three types of metacognitive abilities are strongly interrelated. All are best predicted by the Constructivist learning conception (see Figure 7).
Chain 7: Learning processing & regulation strategies
Most substantial result: Deep learning and Stepwise (Surface) learning are strongly positively correlated. Second: Viewing Effort as a Positive thing is by far the strongest predictor of Stepwise learning, whilst other learning strategies are unrelated to Effort views. Absence of learning regulation strategies is very strong amongst Ambivalent learners. Deep learning is best predicted by constructivist views on knowledge creation (see Figure 8).

Chain 8: Ex ante expectancy-value based achievement motivations
The Ambivalent learning orientations is dominant in explaining ex ante expectancy-value based achievement motivations in that it suppresses the influence of most of the other variables. Students who regard Effort as a Positive thing, regard at the same time statistics as difficult. Anticipated Effort is in two indirect ways related with Viewing Effort as Positive: through Lack of Difficulty, and through Interest (both bringing a positive impact) (see Figure 9).
Figure 9. 8th chain

Chain 9: Measured learning effort

The ninth chain explains measured learning efforts in the two digital tools: the ALEKS practice system, and BB. Measured learning efforts depend on prior knowledge, planned learning effort, and on learning approaches. With regard to learning approaches, two different patterns are visible. First: Ambivalent learners, and Stepwise learners, over overrepresented in the digital practicals. But that is also true for students having a constructivist learning conception; see Figure 10.

Figure 10. 9th Chain

Chain 10: Ex-post expectancy-value based achievement motivations

The tenth and last chain explains ex post perceived effort. Perceived effort is mainly determined by planned effort, Quiz performance, and ex post interest and lack of difficulty in statistics. Measured effort in tutorials plays no role, which is not surprising, since perceived effort refers to all activities in the education of statistics, not only the tutorials (see Figure 11).
Figure 11. 10th Chain

Conclusion and discussions

Effort views are influenced by implicit theories of intelligence. However, there explain only a modest part in the variation of effort views. Stronger relationships exist between Effort views and Academic Motivations. The continuum formed by the several motivational constructs can be made visible by the sequence of beta’s for the Positive and Negative View on Effort, with a dominant role for Positive Views. Learning orientations have very different relationships with Effort Views and Academic Motivations. One, being Personally Interested, is only depending on Academic motivations. Three are mixtures of Positive Effort View and especially Introjected Regulation. The last, being Ambivalent, combines Amotivation with Negative Effort View. Goal orientations are again mainly depending on Positive Effort View and Introjected Regulation. Learning strategies have different type of predictors. In Deep learning, the Academic Motivations play an important role (indirect, via Personally Interested). In Stepwise learning, the direct role of the Positive Effort View is dominant. Self-perceptions of learning efforts, and measured learning efforts, are influenced by self-percieved competence, interest, prior knowledge, and step-wise learning.

References


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Preparing Postgraduate Students for a Career in the Writing, Editing, and Publishing Industries

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Context/scope
The postgraduate program in Writing, Editing, and Publishing (WEP) at The University of Queensland was initiated in 2001 in the School of English, Media Studies, and Art History to address the dearth of excellent, ‘work-ready’ wordsmiths and the desire of many students to gain a postgraduate qualification and a career as a wordsmith in the writing, editing, and publishing industries. Predicated on a holistic approach to publishing in the ‘new’ media of the 21st century, the program encompasses writing and editing in academic, corporate, creative, journalistic, and literary genres within a strongly vocational yet intellectually rich, challenging, rigorous, and technologically sophisticated context.

Since its initial intake, the program has been an outstanding success. Employment outcomes have been excellent: graduates have been hired by prestigious international institutions such as the Museum of Fine Arts, Boston and the British Standards Institution and the Southbank Centre in London, as well as by many Australian private and public organisations at state and federal levels. Conscious of the pervasiveness of contingent employment in the corporate sphere, many graduates have had the confidence and capability to set up freelance consultancies.

The ability to write (and edit) effectively is fundamental to success in the academy and in the professions. Writing is at the heart of disciplinary thinking and at the heart of the contemporary knowledge economy, an economy that is service-oriented and in which writing is ubiquitous, global, and lifelong. Writing ability can no longer be taken for granted as an automatic by-product of higher education because writers must now be able to accommodate multiple contexts and audiences in addition to those of their discipline. The escalating demand for courses in writing, editing, and publishing can be linked to emerging industry priorities in the face of accelerating Web 2.0 technologies.

The sustained success of the program is due to its combination of ‘authenticity’, in the sense of close connection to actual current practice in the publishing industries, and insistence on academic rigour based on the extensive professional and pedagogical experience of its staff. Passionate commitment to this ideal is evident in the program, which blends face-to-face teaching with extremely active Blackboard sites and a wiki.

There has been an extraordinary level of engagement on the Blackboard sites that have been in place every semester since 2004 to complement the face-to-face teaching in all six compulsory courses. In semester 2, 2008, the blended model of face-to-face and online learning via Blackboard attracted 1,273 discussion-board posts in one class of 20 students in a course called Writing about the Arts.

The voluntary requirement to post on Blackboard a summary of or a response to the guest lecture in several of the courses is a stimulating and effective tool for teaching, learning, and communicating. This is in part because the fact that students are on the Internet allows and encourages them to post links, and to follow links posted by others. This expands the material directly covered in the lecture, and gives students a different perspective on it. It also promotes consciousness of the role of initiative, as much as receptivity, in their learning. The creative ways in which students respond in many different genres to the guest lectures in Issues in Contemporary Publishing— with mind-maps, poems, cartoons, puzzles, and board games such as one on ‘A Day in the Life of an Editor’—also incline students to reflect on their individual approaches to the lecture (their attitude, their note-taking, any questions they did or did not pose), and think forward to the next, potentially different, time.

The activities that involve posting work (reviews, style-guide entries, copy-editing, re-writes of deficient documents) on Blackboard in advance of attending class in person have positive teaching effects. For one thing, posting in advance builds confidence in a student to submit their work (frequently in a somewhat raw state) to general scrutiny. The experience of seeing others post their work, and considering what they have achieved, also contributes a subtle and good-naturedly competitive atmosphere. The activities that require students to re-post work on Blackboard after it has been marked, and suggestions made regarding its improvement, are also beneficial: students can experience the
collaborative, consultative nature of much real-world writing, editing, and publishing. The final, posted article is something with which they are more or less happy.

The casual and supportive atmosphere that typically develops on WEP Blackboard forums forms a loop of sorts with the lectures and seminars: the unique social energy of each reinforcing the other. One student enthused that ‘it’s like having class seven days a week’. This 24/7 aspect of the program is greatly appreciated by the many mature-age students in the program.

**Audience: Teachers and practitioners**

Theoretical framework: The paper analyses the discussion board that was the recipient of the 1,273 posts and surveys the students who participated in that class by considering the factors identified by Dysthe (2002) as contributing to high levels of interaction and the characteristics of authentic activities identified by Herrington, Oliver, & Reeves (2003).

Mode of research: Textual analysis, survey and interviews

Findings/conclusions: The calibre of the students, the textuality of the courses, the authenticity of the tasks, and the commitment of the teacher contribute strongly to the engagement of the postgraduate students.

Implications for future research: The applicability of this model in an undergraduate context?

**References**


The development of Informal Learning at the workplace: an example at the Public Administration of Catalonia (Spain)

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Abstract: This paper describe the development of an informal learning experience in a Spanish public administration. We start by discussing the concept of informal learning, stressing the importance of this kind of learning as performance support in the workplace, and linking it to other concepts of learning like reflection-in-action. We then describe the evolution of the project Compartim, from the development of communities of practice as a base for knowledge management, towards a social network environment aimed at connecting people rather than people to information.

Introduction: Informal Learning at the workplace

The concept of informal learning can be rooted until the work of Malcom S. Knowles on adult education (Knowles, 1950). The concept took yet longer to evolve, not emerging until the late 80s with the seminal work of Marsick and Watkins (Marsick & Watkins, 1990). In the last decade the concept became increasingly important alongside with the raise of Lifelong Learning and social networking through the Internet.

There are many definitions and models of informal learning. The concept is usually opposed to formal education and training. Wikipedia definition says that "in the context of corporate training and education, the term Informal Learning is widely used to describe the many forms of learning that takes place independently from instructor-led programs: books, self-study programs, performance support materials and systems, coaching, communities of practice, and expert directories". Livingstone (2001) says that "Informal learning is any activity involving the pursuit of understanding, knowledge or skill which occurs without the presence of externally imposed curricular criteria". Marsick & Watkins stressed the importance of intentionality in Informal Learning, making a distinction between incidental and intentional learning, where incidental learning is a subset of informal learning. As they put it:

Informal learning, a category that includes incidental learning, may occur in institutions, but it is not typically classroom-based or highly structured, and control of learning rests primarily in the hands of the learner. Incidental learning is defined as a byproduct of some other activity, such as task accomplishment, interpersonal interaction, sensing the organizational culture, trial-and-error experimentation, or even formal learning. Informal learning can be deliberately encouraged by an organization or it can take place despite an environment not highly conducive to learning. Incidental learning, on the other hand, almost always takes place although people are not always conscious of it (Marsick & Watkins, 1990 p. 12).

Daniel Schugurensky introduced a new criterion by making a distinction between intentionality and awareness (at the time of the learning experience). These leads to three forms of informal learning: self-directed, incidental, and socialization (Schugurensky, 2000). Examples of these three forms are:

a) Self-directed learning is when a little girl decides that she wants to start putting her socks by herself, and after many attempts finally succeeds. There is intentionality and awareness of the learning experience.

b) Incidental learning is when a little boy touches a hot iron and learns that it is not wise to do it again. There is no intentionality but the child is aware of the learning experience.

c) Socialization is when a toddler learns to speak a first language. There is no intentionality and the toddler is not aware that those are learning processes in which imitation play an important role.

Informal learning is becoming especially important at the workplace. Indeed, the research done by Victoria Marsick and Karen Watkins showed that only 20% of what employees learn comes from formalized, structured training. In other words, 80% of what people learn at work is done by informal means (other authors claim that close to 90% of workplace learning takes place through informal means (Sorohan, 1993)). Usual practices to learn this way are to question, listen, observe, read and reflect on the work environment. The Internet has of course empowered this by multiplying access to people and information.
However, practitioners care little about percentages (whether Informal Learning accounts for 75%, 80% or 90% of the learning) and definitions (whether Informal Learning should be incidental/unintentional or not). What is really important for them is how it can benefit their employees and their organizations, and how to implement it effectively (Conlon, 2003). In other words, how informal learning is (or is not) a strong tool/approach to give performance support. As Jay Cross says: “Executives don’t want learning; they want execution. They want the job done. They want performance” (Cross, 2007).

Elsewhere, the author of this paper gave a context for informal learning at the workplace by making a distinction between learning about, learning to do, and learning to be (Vasquez Bronfman, 2007). When one wants to learn a competence, a skill, he/she must first learn to do something (e.g. to negotiate, rather than about negotiation). Then, by having a recurrent practice of the competence in the proper community of professionals, one can learn to be somebody (e.g. a negotiator). Besides, the author also introduced different levels of learning when one is learning to master a given competence: novice, competent, and expert (Vasquez Bronfman, 2008). Learning practices are of course not the same if one wants to learn about something rather than learn to do something, and if one wants to reach a novice rather than an expert level. In this context, informal learning practices – access to learning chunks, participation in communities of practice, surfing the Web, reading the right book/article at the right moment, informal (but often intentional) conversations with smart people, etc. – can help a professional learn to do and learn to be, and can help him/her to reach competent and expert levels. In this context, informal learning is a real issue for professional development because it is aimed at giving performance support (which is the real interesting goal of informal learning in corporations). Well done formal training (i.e. learning by doing) is still necessary for novices to learn a skill and to lead them until a competent level.

Interestingly, the distinction made by Marsick and Watkins on incidental learning can be related to the ideas of Donald Schön on reflection (Schön, 1987). Incidental learning is often the result of a significant unplanned or unexpected event: learning begins with some kind of trigger which is often a surprise (Marsick & Watkins, 2001). This surprise – the “incident” that trigger incidental learning – is also the starting point for reflection, be it reflection-in-action or reflection-on-action. Moreover, the author of this paper showed a parallelism between Schön’s concept of reflection and some ideas of German philosopher Martin Heidegger (as interpreted by Hubert Dreyfus) on learning from breakdowns (Vasquez Bronfman, 2008). In other words, the practices of learning from incidents are the same than of learning from breakdowns and from reflection.

There are some interesting examples of Informal Learning at the workplace, supported by information technologies. At Pfizer, a small number of research scientists developed an internal shared knowledge repository using wiki technology, to help them work more effectively on their projects. From those early origins, a company wide application called Pfizerpedia was developed. It acts as a central web hub that colleagues can use to link, generate and search content authored by the global Pfizer community. Project teams may use Pfizerpedia to share non-sensitive information, both within the group and with the rest of the organization. The application (who is built on the same software than Wikipedia) now has over 2500 contributors creating over 5000 content pages. More than 3000 pages have received at least 1000 hits each (CIPD, 2009).

At Sun Microsystems, Sun Learning eXchange (SLX) is a tool that allows every Sun employee to develop content, at their computer or with a webcam, and publish it in a secure environment. It is a kind of YouTube-like site, where employees can also vote for the best informal learning content. As learners, Sun workforce can then choose the most rated videos, podcasts, etc, on a given topic, and learn at a desktop or a mobile device such an iPhone or an iPod (T+D, 2008).

In the Public Administration, a huge achievement is the IdeA Communities of Practice platform for knowledge sharing of local government employees in the UK (Dale, 2010). Launched in September 2006, in March 2010 there were more than 55,000 registered users and 1,025 communities. Interestingly, this project started with the observation that finding the right piece of knowledge at the moment one needs it can be a frustrating experience with more than 100,000 Web pages only in UK public organizations. The missing dimension in knowledge management is connecting people, rather than people to information. Consequently, to connect people from shared interests, problems and experiences, was the main goal of the project and the main functionality of the platform.

**Communities of Practice at the Department of Justice**

The Kingdom of Spain is organized in 22 autonomous regions. In Catalonia, at the Department of Justice, the CEJFE is responsible for all of the documentation (including the Library) that can be needed by the professionals working at the department, and for all the training they need. By the autumn of 2005, the responsible for new training projects was trying to convince his management and the internal customers about the benefits of knowledge management and collaborative work. However, "customers" were not keen about the offers. Being aware that in corporate settings the
only thing that really matters is the job one must do and for which one is paid, we did not want to offer something that nobody needed. Therefore, the author suggested to start by investigating the real demand for learning of the targeted employees, i.e. the professionals who work on the rehabilitation of prisoners: psychologists, teachers, jurists, educators, social workers, etc.

We started by analysing the situation of those people at work: what they did, how they did it (environment, context, skills, etc.), what they needed, the main breakdowns they faced, and what was really at stake for them in doing their jobs. We have done this by interviewing a sample of 50 people in various settings (central services, prisons) and at different hierarchical levels (from top management to young employees). The results showed (among others) the need of launching communities of practice for the different professions as a previous step of knowledge management projects. Indeed, one of the main causes of failure in knowledge management projects is that provider companies offer sophisticated systems to store and retrieve knowledge but they take for granted that upstream people will share their knowledge and store it in the knowledge base. Experience shows that this hypothesis is false; what is missing in most knowledge management projects is a knowledge share production system. Communities of practice are a good candidate to be this kind of system (Brown & Duguid, 2002).

For the Catalan Department of Justice, the author proposed the following model of a knowledge management system (see Figure 1):

**Figure 1.** The knowledge management system

Employees participate in communities of practice, where they share their knowledge and produce new knowledge. The discussions are summarized and stored in the knowledge base as short pieces of knowledge (learning chunks). Other learning chunks coming from external expertise, and relevant papers selected by the librarians, are also stored in the knowledge base, which is accessed through a knowledge portal by the employees.

The project (called Compartim, i.e. “we share” in Catalan) started in May 2006 with five communities of practice (CoP): psychologists, jurists, educators, social workers, and a CoP devoted to those who worked with young prisoners. Social workers started to work on the creation of a template for a standardized report, and on a protocol to deal with foreign prisoners. In the years before the economic downturn, Spain had a huge increase of immigrants coming from Africa, South America, and Eastern Europe; therefore jurists and psychologists also started to work on how to deal with foreign prisoners. Finally, for young employees it was very difficult to work with young prisoners, so they started a CoP on how to deal with them.

Four years later there are fourteen active communities of practice. The main difficulties were (of course) organizational and political ones. It has always been difficult to motivate the majority of the professionals to participate in the CoPs. This is because the project faces a contradiction between the requirements of an innovative project and the industrial organization of the daily work. This contradiction demonstrates in a tension between what the managers say (“people will have time to participate in their CoP”) and what really happens, i.e. the fact that the management is reluctant to let employees participate in CoP activities. Management is reluctant because the way work is organized implies to “extract” people who participate in CoPs (and especially the community coordinators) from their working place. This disturbs the organization and create political problems. Moreover, every manager who has some power and is involved in the project tries to benefit from it, hence putting CoPs participants in a crossfire. Finally, there is a lack of reward and recognition for participating in the communities of practice.

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How (and why) then this project is a success, at least in the creation and development of communities of practice (the computerized knowledge management system has never been implemented)? First because the targeted employees are good professionals and at least part of them are willing to constantly improve their performance, hence participating in communities of practice. Second, because we were aware that in order to run a project like this we should built on *bricolage* theory of organizational change (Ciborra, 2002) and be able to master the art of improvisation in project implementation. This is particularly true concerning political issues of project implementation. One should be flexible, harmonize contradictory interests, and know what is possible to do among what is desirable. In this sense, we always paid attention to have enough political power to implement one new step, otherwise it is better not to do it because it will fail (Crozier & Friedberg, 1977; Markus, 1983).

Beyond communities of practice and knowledge management: nurturing other informal learning practices

In autumn 2009, the leader of the project *Compartim* at CEJFE decided to extend its scope in two ways: a) to go beyond communities of practice and to develop every informal learning service that could be needed; and b) to go beyond professionals involved in the rehabilitation of prisoners, developing informal learning initiatives in the whole Department of Justice of the Catalan government. Following the same rationale that guided our investigation in 2005, we first made a study in order to know what informal learning services could really be appreciated by employees. The author (with a young researcher at the Universitat Autònoma de Barcelona, Department of Applied Pedagogy) interviewed a sample of 21 employees using convergent interviewing techniques (Dick, 1998), where half of them are managers. Essentially, we asked them what they do, how they do it, the main recurrent problems they face in doing their jobs, how they use to solve these problems and, last but not least, how they learnt to do their jobs.

Findings showed that almost 100% of interviewed workers learnt their jobs in an informal way: looking at experienced workers, asking them for tips (face to face conversations, by telephone or by e-mail), sharing knowledge with their peers (in the communities of practice or outside them), and searching information (in books, surfing the Internet, etc.). What they have learnt in their university studies are theoretical frameworks and some techniques, but it is by far not enough to perform properly. Another interesting finding is that in order to learn their jobs and to solve problems, *all of them rely on personal networks*. Our conclusion is therefore the same of S. Dale research: *the missing dimension of knowledge management is people’s connections*. Indeed “What can you do?” has been replaced by “What can you and your network connections do?” Knowledge itself is moving from the individual to the individual and his contacts (Cross, 2007).

These findings are also consistent with a recent study done by GoodPractice Ltd. on “How managers learn”, who showed that the most used methods of learning are informal chats with colleagues and the use of search engines (GoodPractice, 2010).

Finally, our investigation also showed that in order to solve technical problems, workers ask competent colleagues and then write short pieces of paper in order to memorize it. We believe that these short pieces of paper are in fact learning chunks that could be shared on a proper platform.

The results of this investigation lead to two main decisions:

a) To create a repository of learning chunks, in order to help employees solve technical problems. In order to be effective, these chunks must be based on users’ experience and written in employees’ daily language, not in a specialized technical one.

b) To implement a kind of Personal Learning Environment (PLE), in order to help employees find the right person and ask for help.

However, our idea of a PLE for this project differs from some pilot implementations like the Manchester PLE Project (van Harmelen *et al*., 2009). It should be a tool like an internal LinkedIn or Facebook, with an *evolving* directory of employees’ skills and knowledge. While starting with a traditional social network tool where employees declare their expertise in their profiles, the directory could evolve on the basis of what employees write in their blogs and/or in wiki pages, their participation in communities of practice, tags and tag cloud, etc.

Conclusions

In this paper we started with a discussion on the informal learning concept and its relevance to workplace learning, giving some examples of informal learning in practice, both in private companies than in public administrations. We the evolution of the project *Compartim* at the Department of Justice of the Catalan government, from the development of communities of practice to a larger vision of informal learning. A recent research done at the Department of Justice on how people learnt their jobs and solve the problems they face, showed that almost 100%
learnt their jobs in an informal way. Moreover, in order to learn and to solve problems, they rely on personal networks.

Our observations lead therefore to implement a tool that connect people rather than people to information.

**Endnotes**

(1) We believe the use of learning chunks is a very interesting possibility for learning and professional development and could be a good link with knowledge management.

**References**


The value and impact of the two-tier cycle of independent business research influencing teaching and learning directly: The results of an investigation into the use of 360 degree feedback within organizations and how this can strengthen the business and m

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A valuable and often under-used relationship exists in many places of business and management education. Individual research students, often with supervisory teams of academics go about their business of adding original contributions to our stock of knowledge, primarily in order to achieve MPhils and doctorates, and thence to publish. Academic teaching teams go about the business of teaching usually within fairly tightly defined content/functional boundaries, often using text books and experience of ‘outside’ organizational practice. The two tiers may be seen to co-exist but not interact in any kind of regular way. We suggest greater communication and interaction between these routines can be extremely powerful for the legitimacy and ethical strength of the curriculum.

As topical issues wax and wane throughout business and management education in the higher education field, academics and schools find themselves dealing with concepts and practices which may be prevalent in the ‘outside’ world of organizations that remain less than fully explored in research terms. It is argued here that one such practice (and its attendant philosophy) would be performance. Our particular example concerns teaching about the field of 360 degree performance appraisal and management.

Although seemingly ubiquitous in organisational life, in depth investigation of the contextualized and iterative effects of 360 degree feedback within organizations remains scarce. This means there is little empirical support for business education in its efforts to communicate techniques which are alleged to enhance or improve performance.

Using qualitative data generated from 11 in-depth case study investigations of organizations within the UK, this presentation will suggest how 360 degree feedback practice is embedded within cultural and historic organizational processes. The reciprocal and iterative connection between specific environments and organizationally unique 360 degree practice may result in either unsuccessful or damaging outcomes, or successful experiences. A model will be suggested which clarifies the nature of supportive environments in terms of the interactions between critical factors identified within the research. Such a model allows understanding of the overall environment of support perceived by the employee as they experience the 360o feedback process.

This kind of research then provides immediate and tested material for business academics to teach with confidence and clarity about when, how and where the use of 360 degree feedback may lead to successful experience and hence potentially organizational performance improvement. This presentation suggests that many other examples of current teaching practice may be reliant on unfounded research, folk narrative, and best-seller prescriptions, rather than specific investigations undertaken with academic rigour. Our suggestion is that academic partnerships between active student researchers and business school staff point the way ahead for more definitive and robust business and management education practice.

- Methodology
- Grounded theory approach
- Literature reviewed
- Qualitative research techniques
- 11 cases
- 84 in-depth interviews
Why students think that business trainee teachers will (or will not) be good teachers

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Abstract: Evaluation of teaching has become an increasingly important source of feedback for teachers. This paper presents an empirical study of factors influencing students’ evaluation of teaching (SET). A respondent sample of 610 students was asked to evaluate the teaching performance of 33 business trainee teachers during their internships at commercial colleges. The results allow conclusions to be drawn on how to improve the quality of training teaching behaviour at university level in the new master’s program of Wirtschaftspädagogik (Business Education) at WU Vienna (Vienna University of Economics and Business).

Aim and structure of the paper

This paper aims to present and discuss the results of a recent study of influences on students’ evaluation of teaching (SET). Furthermore, conclusions will be drawn from these results to improve the quality of courses and programs for teacher training at university level in the new Wirtschaftspädagogik (Business Education) master’s program at WU Vienna. These results might be interesting for other professionals in the field of business education and teacher training.

As in many other settings of assessment, global ratings can be conducted easily. Nevertheless, it is important for teacher trainers and trainee teachers as well as researchers to know why students think that someone will (or will not) be a “good teacher”. When analyzing these influences, a questionnaire comprising specific items on teaching behaviour as well as global ratings is necessary. Moreover, the impact of potential biases such as sympathy, the learner’s interest in the subject, and social or interactional behaviour (Marsh, 1987; McKeachie, 1997; Greimel-Fuhrmann, 2003) must be taken into consideration.

The first section of this paper gives a short introduction into related work. Subsequently, the design, the questionnaire, and the results of the study are presented. Finally, the paper provides conclusions for improving the education of business teachers. This section is of particular interest for program managers and education researchers.

Related Work

The question of what constitutes good teaching has often been discussed in both the academic and public arena. Substantial research has been conducted with a changing focus from personality traits in the 1950s and 60s (e.g. Getzels & Jackson, 1970) to the influence of the teaching process on learning outcomes (product) mainly in the 1970s and 80s (e.g. Brophy & Good, 1986; Helmke, 1988). Studies showed that “clarity” of teaching is essential for students (Cruickshank & Kennedy, 1985). Well-structured lessons with clear explanations and appropriate assignments for the students have been empirically shown to have positive effects on learning achievement of the students, as they can learn more easily from a well-structured presentation than from an unclear one (Brophy & Good, 1986). Furthermore, research on the process and the product of instruction showed “that the effective-teaching processes contribute to outcomes beyond achievement gains; there are significant benefits in term of task engagement, active learning, motivation, and positive attitudes that prevent misbehaviour” (Gettinger & Kohler, 2006, p. 79).

However, despite the large number of empirical studies we still lack a clear definition of good teaching (Bromme & Rheinberger 2006). In order to analyze the factors influencing the results of studies on instructional quality, further research showed that the impact of a large number of factors can be expected (Greimel-Fuhrmann, 2003).

Being a teacher is more than just teaching subject matter to students. A teacher has to support and transfer various competences, to diagnose if someone needs more help or more challenging, to assess students, to advise them during and after their time at school as well as help them to improve their learning styles, to organise and administer (extracurricular) events or school staff meetings, and to peer-review, innovate and cooperate (Kliebsch & MeloeFSki, 2007).

Various problems of finding an answer to the question of what is a good teacher have arisen. On the one hand, it is very difficult to find precise and clear criteria that make a good teacher since a teacher has to handle each class in a different way due to numerous reasons such as the heterogeneous backgrounds of the students (Lipowsky, 2006).
the other hand, the picture of a good teacher is subjective as everyone has his/her own ideas of how a good teacher should be or should not be (Boesch, 1987).

Many definitions and types of competence can be found in the literature. For example, Frey distinguished between subject-specific competence, social competence, personal competence, and method competence (Grillen et al., 2007; Huck-Schade, 2003; Gnahn, 2007). Helmke (2009) differentiates between subject-scientific expertise, didactic expertise, quality of motivation, and diagnostic expertise. Consequently, our study tried to observe different aspects in order to find an answer to the question of why students think that business trainee teachers will (or will not) be good teachers.

**Method and Instrument**

**Setting**
The main aim of the teaching internships for business education students is to offer them the opportunity to apply and practise their teaching skills. During the three months of the internship the trainee teachers have to teach various business subjects (e.g. accounting and business administration) to students at commercial colleges (secondary level II). As this is the first time students of business education may teach “real” students in a school, mentoring teachers accompany these internships.

**Participants**
The sample for the study consists of students at commercial colleges in Vienna, Austria, who evaluated university students of business education during their teaching internships as trainee teachers. Overall, 610 students evaluated 33 trainee teachers between September 2008 and January 2009.

The average age of the students was 16.21 years (SD = 1.74, range = 13 – 27) and 60.2 % of the students were female which is typical of students at Austrian commercial colleges. German is the mother tongue of 68.9 % of the respondents; most of the others have a Turkish or Serbian/Croatian background. The average age of the trainee teachers was 26.03 years (SD = 3.67, range = 22 – 35) and 75.0 % of the students were female. Almost half of the students (46.88 %) had already gained practical experience in teaching before the internship.

**Questionnaire**
Data on the students’ teaching behaviour and overall ratings of their teaching performance was collected by using a questionnaire with closed questions based on Greimel-Fuhrmann’s research (2003) on SETs. Students were asked to answer 39 closed questions about
- their interest in the subject (e.g. “I am interested in today’s topic.”),
- self-certification (e.g. “Usually I have no difficulties understanding this subject.”),
- subject-specific knowledge of the trainee teacher (e.g. “I was able to understand the trainee teacher’s explanations.”),
- sympathy for the trainee teacher (e.g. “I think the trainee teacher is a very likeable person.”),
- social/interactional behaviour (e.g. “The trainee teacher knows how to interact with us students.”), and
- global ratings of teaching performance (e.g. “All in all, I think that s/he will be a good teacher.”).

Therefore, a rating scale (100 % = I agree completely to 0 % = I do not agree at all) was used in the questionnaire (see Figure 1).

![Exemplary questionnaire item](image)

```
<table>
<thead>
<tr>
<th>I agree...</th>
<th>completely (100 %)</th>
<th>mostly (75 %)</th>
<th>partly (50 %)</th>
<th>little (25 %)</th>
<th>not at all (0 %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All in all, I think s/he will be a good teacher.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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**Results**
In order to identify the factors influencing students’ global ratings of their teachers, a two-step approach was chosen. First, factor analyses were carried out (to reduce a large number of variables to a smaller number of factors) and correlations between teaching behaviour variables and global ratings were examined. Secondly, a regression model was used to test the simultaneous influence of the learners’ interest in the subject, the learner’s self-certification, the learner’s sympathy for the trainee teacher, and the subject-specific knowledge of the trainee teacher (as perceived by
the students), as well as his/her social/interactional behaviour on global ratings. The data were then coded and processed using SPSS (version 17.0). As shown in Figure 2, the value of $R^2$ equals .698. This means that more than two thirds of the variance of global ratings can be explained by the ten variables in Figure 3.

### Summary of the Model

<table>
<thead>
<tr>
<th>Model</th>
<th>$R$</th>
<th>$R$ Square</th>
<th>Adjusted $R$ Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.835$^a$</td>
<td>.698</td>
<td>.690</td>
<td>.56325072</td>
</tr>
</tbody>
</table>

**Figure 2. Summary of the Model**

![Figure 2](image)

<table>
<thead>
<tr>
<th>independent variables</th>
<th>standardized coefficients</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>rhetorical and didactic competence</td>
<td>.300</td>
<td>.000</td>
</tr>
<tr>
<td>efficient use of class time</td>
<td>.242</td>
<td>.000</td>
</tr>
<tr>
<td>structure and practical relevance of content conveyed in class</td>
<td>.181</td>
<td>.000</td>
</tr>
<tr>
<td>sympathy for the trainee teacher</td>
<td>.232</td>
<td>.000</td>
</tr>
<tr>
<td>social behaviour</td>
<td>.158</td>
<td>.000</td>
</tr>
<tr>
<td>interactional behaviour</td>
<td>.068</td>
<td>.092</td>
</tr>
<tr>
<td>So far, I do understand the content of today’s lecture</td>
<td>.138</td>
<td>.000</td>
</tr>
<tr>
<td>I have participated actively in the trainee teacher’s lessons</td>
<td>.047</td>
<td>.180</td>
</tr>
<tr>
<td>I am interested in today’s topic</td>
<td>-.013</td>
<td>.729</td>
</tr>
<tr>
<td>Usually I have no difficulties understanding this subject</td>
<td>-.049</td>
<td>.142</td>
</tr>
</tbody>
</table>

**Figure 3. Results of the regression analysis**

Figures 3 and 4 provide an overview of the variables in the regression model (significant results are printed in bold). All three factors of subject-specific knowledge of the trainee teacher as well as sympathy for him/her have the strongest impact on global ratings: rhetorical and didactic competence ($\beta$=.300; $p<.01$), efficient use of class time ($\beta$=.242; $p<.01$), structure and practical relevance of content conveyed in class ($\beta$=.181; $p<.01$), sympathy for the trainee teacher ($\beta$=.232; $p<.01$), and social behaviour ($\beta$=.158; $p<.01$). Additionally, the item “So far, I do understand the content of today’s lecture” also influences global ratings ($\beta$=.138; $p<.01$). Looking at the beta-weights, the impact of the factors seems to be generally (very) low.

However, the effects are statistically significant and considerably higher than the effects of other variables in the model such as the items “I have participated actively in the trainee teacher’s lessons” ($\beta$=.047; $p=.180$), “I am interested in today’s topic” ($\beta$=-.013; $p=.729$), “Usually I have no difficulties understanding this subject” ($\beta$=.049; $p=.142$), and the factor interactional behaviour ($\beta$=.068; $p=.092$) which are not significant.
Discussion

This study illustrates that rhetorical and didactic competence as well as efficient use of class time have the strongest impact on the global ratings of students. Research shows that the factors sympathy, social behaviour, and feeling competent regarding course content have an influence on global ratings too, although the beta-weights are comparatively smaller.

Business education students are encouraged to be evaluated during their teaching internships for personal reflection of their (improvement of) teaching. However, many of them use just a short evaluation form to get global feedback from the students. The results of this study may give trainee teachers the opportunity to gain a deeper understanding of the factors influencing the global ratings they receive during their teaching internships.

A major conclusion from the results of this research for teacher education at WU Vienna is that students need to be knowledgeable about the subjects that they are supposed to teach. Moreover, they need to know how to teach these subjects in an interesting and motivating way, how to explain the subject matter in an understandable way and how to treat students at school.

Whether students perceive trainee teachers to be likeable or not is mainly influenced by the personal traits of the trainee teachers. According to Roberts & DelVecchio (2000) personal traits are quite settled at the age of about 20 years which is the age business education students usually are when attending the master’s program. Therefore, the intention of our program should not be a general change of personal traits, but it is important to teach students of business education how to communicate in class, how to be a just and fair teacher and how to treat students at school.

The high influence of the three factors comprising subject-specific knowledge of the trainee teacher is an indication that our business education students should be trained in this important field. Therefore, 38 standards of education have been defined for the master’s program (Aff & Schwarzl, 2009). These standards focus on subject-specific knowledge of the trainee teacher such as didactic competence and expert knowledge of accounting, business administration, information systems, and economics. Examples would be the abilities to structure lessons clearly, to manage and apply teaching styles appropriately and according to theoretical principles, to define learning goals and educational standards on different levels and implement them, to structure and present introductions to new material thematically and appropriately for different target groups, to prepare and give feedback on homework and problem areas competently or to use questions asked by the teacher. This recently developed scheme is used in the study program of business education for planning and coordinating the different course syllabi.

Consequently, this research study shows that the results of evaluations can be used as a basis for educational innovation and for developing new study programs.
References


Keynote 2

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The title of David's presentation is "Individual Development as an Entrepreneurial Discovery Process". From the economic perspective, entrepreneurship is conceived as a creative function involving the discovery of new market profit opportunities and the germination of novelty in the pursuit of economic gain. Such a discovery process can be applied to the internal individual development leading to the concept of intropreneurship. Intropreneurship, being the art of self-recognition and self-construction of the individuals' identity, enables individuals to be alert to cognitive profit opportunities thus leading them to a better control of their internal environment. This theoretical conception of intropreneurship rises the question of the impact of education – through pedagogy – on the process of internal discovery and the extension of the individual's self-awareness. Taking example on the current financial and economic global crisis, a specific role for teachers is to explain why financial and economic theoretical models are partly liable for the release of that crisis. These models have often led traders to adopt behaviors founded on exuberant irrationality (ie, decisions-making based on an underestimation of the level of the associated risks). In doing so, teachers will act as pedagogic entrepreneur and may help financial and economic agents to develop their intropreneurial abilities. Hopefully, it could lead them to adopt in the future less exuberant and risky behaviors.
Individual Development as an Entrepreneurial Discovery Process: a solution to the current financial and economic crisis?

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Abstract: The current financial and economic crisis is a ‘major crisis’ that challenges the place and the role of finance within economies. Indeed, the risky behaviors of financial actors have generated none-internalized negative externalities on society. Hence, in order to help future financial actors to integrate the consequences of their decision making, it is necessary to promote a new education which possibly can result in less irresponsible behaviors. Because the conjectures mobilized by current financial agents are based on Neoclassical inadequate models, these latter can be deemed responsible for the occurrence of the contemporary crisis. Basing itself on the student’s reflexivity, the Austrian concept of intropreneuship enhances the entrepreneurial ability of the agent to change by him/herself his/her own representations of the consequences of his/her actions. The anticipated effect of this entrepreneurial discovery process would result in a better coordination of the agents and to a minimization of the risks involved by financialization of the economy.

Introduction
Is the crisis that was born in 2007 the harbinger of a new phase in the history of Capitalism? In comparison with the most important financial crises of the past, the issue is essential. The crisis of 1873 had put an end to the first globalization of trade and inaugurated a long period of depression and a retreat into protectionism. The crisis of 1929 and the Great Depression that followed paved the way for a new growth model based on the redistribution of productivity gains to the mass of employees, opening a new growth regime characterized as “Fordism” - an atypical growth period regarding both its magnitude and its duration in the history of Capitalism. In both cases, a deep reorganization of Capitalism had resulted (Marcel & Taieb, 2008). Indeed, these crises reflected, both in the financial sphere as in the modes of regulation of the real economy, major disequilibrium.

Is the contemporary crisis a bearer of such upheaval? Is it one more minor setback in a financial History that is a succession of periods of "irrational exuberance" (Shiller 2004) and as equally excessive periods of disillusionment? Is it a minor setback that would have little more impact on long-term growth of capitalist economies than those who preceded it in recent years? If this assumption is valid, a simple adaptation of regulations, of conventions and existing institutions will be sufficient to integrate to the dynamics of the system the lessons of the contemporary period. The current crisis could therefore - if we borrow a terminology from the French school of regulation (Aglietta, 1976) – be given the name of a "minor crisis" (Vidal, Baslé & Mazier, 1993): it is perceived as a normal component of the implemented process of growth and accumulation. Such crises, developing without causing major disruptions of existing institutional forms, resolve on their own without it being necessary to make profound institutional reform or to radically change current economic policies.

However, the dimensions of the contemporary crisis leads to the hypothesis that there are more profound disruptions of the current accumulation regime (1) and of its mode of regulation (2). The contemporary crisis would then be a ‘major crisis’ (Vidal, Baslé & Mistral, 1993), challenging the modalities of past growth and calling for deeper structural reforms.

If we adopt the hypothesis of the presence of a “major crisis” of Capitalism, one finds that the financial crises that have forestalled it in the 1990s (Japan in 1990-2003; South-East Asia in 1997, burst of the dot-com bubble in 2000-2002) can be regarded as the first manifestations of the current crisis. Therefore, we can only conclude that the globalized growth model based on the preeminence of finance and implemented from the 1980s has largely failed to create conditions of its own stability.

Since the early 1980s, Capitalism has entered - under the dual impact of financial globalization and new information technologies - a new phase of its development characterized by many economists as a “shareholder Capitalism” (Plihon, 2004; Bosserelle, 2004; Rebérioux, 2010).

This new Capitalism has established the dominant role of the financial logic in capitalist economies. The capital markets now occupy a prominent place compared to bank financing. Moreover, the logic of competition dominates government intervention in regulating the financial system (Plihon, 2004). This new regime is thus described as a “financial free markets economy” (Aglietta, 2005).
The way of functioning of corporations is affected by the increasing weight of finance: we witness, with the rise of institutional investors, a weakening of household, wage-earners, non-financial corporations and the State. Within companies, the balance of power vacillates in favor of shareholders. For managers, the main objective is the creation of shareholder value, i.e. the stock market value increase of companies (3) (Bosserelle, 2004).

This increasing prominent role of finance within economies might pose considerable risks on real economy and society (Bosserelle, 2004; Lenglet, 2008; Aglietta, 2008; Dockès & Lorenzi, 2009). In fact, being structurally unstable (Kindleberger, 1978), finance would be considered one of the reasons, among others (4), of the crisis that began in the summer of 2007.

However, such a challenging of finance in the context of the current crisis also means challenging the quality and the validity of conjectures that underlie the behavior of key agents of the financial sector. Such conjectures, mainly based on approaches related to Neoclassical economics, have the characteristics of a logic of optimization of financial profits in the short term. Financial agents consider to have reached a sufficient mastery of the risks so that any financial failure has only local and minimal impact for the society as a whole. If an entrepreneur is an individual who, by building conjectures, by mobilizing his/her alertness (Kirzner 1978 1992 2000), subjects then those conjectures to the refutation of market testing (Popper, 1988: Harper, 1994), hoping to seize a profit (Mises, 1985), it is then necessary to note that the entrepreneurial conjectures of financial actors were severely refuted in 2007. While it is interesting to understand the reasons of this failure, it must be emphasized that the formulation of more adapted conjectures to the global economic and financial context can not dispense with challenging the models that have guided the behavior of the main financial actors since 2007.

It is here that education can have a major role to play. If we consider the current economic and financial crisis as a general pedagogy of error, it should be requested from researchers, teachers and pedagogues to better prepare the financial actors of tomorrow. In this context, teachers and pedagogues may themselves be entrepreneurs acting and interacting in the market of ideas and other theoretical models. Indeed, they are able to modify education and pedagogy in order to promote the development of intrapreneurship (Aimar, 2008) among students. The intrapreneurship, being the art of self-recognition and self-construction of individuals’ identity, enables individuals to be alert to cognitive profit opportunity, then leading them to a better control of their internal environment. This theoretical conception of intrapreneurship raises the question of the impact of education – through pedagogy – on the internal discovery process and the extension of students’ self-awareness.

After clarifying the role of finance in the onset of the current crisis, we postulate that the theoretical Neoclassical models used by financial actors to develop their own entrepreneurial conjectures are partly responsible for triggering the contemporary crisis. These models, structurally underestimating the scope of financial risk, would have led the main agents of financial and currency markets to improperly and even exuberantly act (Shiller 2004). Teachers and pedagogues, helping actors in this sector to realize the nature of errors made, act as pedagogic entrepreneurs. In doing so, they can help future financial actors to develop their own intrapreneurship, which, we hope, could eventually lead them to adopt less disruptive behaviors.

1 - Finance and Banking at the heart of the contemporary crisis

The crisis, considered from a financial angle, would be primarily the result of an expansionist monetary policy, particularly led by the U.S. Central Bank (FED) in 2002. This policy, which some economists consider irresponsible (Salin, 2010), is the cause of the liquidity overabundance available to commercial banks. This liquidity would have been employed particularly in the form of mortgages with low interest rates over the period 2002-2006. The banks have benefited from the abundance of cheap liquidity (Salin 2010, p. 20-23) to highly develop mortgages destined for previously excluded groups of people (subprime credit) as having high solvency risks. The objective was to promote access for all to real estate ownership. The growth in U.S. real estate market in this period was thus essentially a ‘credit growth’ (Moatti, 2009).

But in 2006, the FED having steadily increased its principal interest rate from 1 to 6%, the reimbursement defaults began to systematize (Lordon, 2008; Salin, 2010). In this conception, the contemporary economic and financial crisis is thus the consequence of a lost bet by banks on mortgage, more specifically on the market of subprime loans, risky loans granted to this clientele with limited creditworthiness. This overexposure was made possible by the mechanism of ‘securitization’ of debts that allowed banks to spread risk within the financial system. In a globalized capital market, this is the entire global finance which was instantly weakened. This financial crisis has resulted in the deterioration of the banks balance sheets and the creation of a motion of no distrust which, in turn, generated a crisis of liquidity on the interbank market. In fact, even now, most of the refinancing is channeled through central banks. As a result, for all economies, a massive and concomitant depreciation of a broad assets class (lower real estate prices and falling stock quotes).
Moreover, these failures have not remained confined to finance. The interbank market has been subject to a fall of confidence index. Unable to assess the solvency of other banks - or even their own solvency – all banks, have stopped lending there liquidity surplus. Banks with deficits had no other choice, risking becoming insolvent, to turn themselves toward the central banks in order to obtain a supply of cash. Moreover, banks, fearing reimbursement defaults of their customers, were conduct to re-enforced access conditions to credit for non-financial agents (enterprises and households). However, credit is the flow that irrigates the economy. Without credit, businesses reduce their investments, households differ their spending. The economy goes therefore into recession, with its waves of bankruptcies and a rise in unemployment. Thus, the financial crisis spread to the real economy.

2 - Are the Neoclassical representations shared by the agents of finance responsible for the crisis?
The neoclassical approach is the prevailing orthodoxy in economics and finance since the late 1960s. It is the theory which is primarily taught in courses of economics and finance. An economist, if he/she wants a career in a University or in major economic and financial institutions, must be affiliated with this school of thought. The works of six Neoclassical winners of the “Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel” (5) are generally used by financial actors to develop complex models allowing them to “predict” evolutions in financial markets . This approach, highly formalized, gives itself the role of theoretical guidelines for determining rational decision for the main economic agents. The quest for efficiency is its ultimate goal (Guerrien, 1996). This approach bears no value judgments about the purposes of the action, therefore about their moral dimension.

This theory assumes a perfect rationality of actors, i.e. actors always use available resources in their best interests given the constraints they face. Thus, investors are considered to be natural arbiters between profitability and the level of the perceived risk on the base of available information. In optimally allocating capital, their actions would allow a self-regulation and a stabilization of the market

Thus, the Neoclassical economists consider that prediction is admittedly difficult but not impossible if it is conducted methodically and if it relies on market signals.

Markowitz (1952) shows that in calculating the risk associated with a financial security, it should be noted the amplitude of its return, which changes daily, depending on the market quote of the security and the income it yields. He explains that the diversification of investments reduces risk and therefore determine an efficient portfolio, i.e. offering the highest possible expected return for a given level of risk.

This rule stands that the financial markets allow all investors to scientifically select the desired level of risk and that it is the latter that determines the performance of the chosen investment. This approach argues that it is the market itself which is efficient. This idea was developed by Fama (1970) through the concept of "efficient market": on financial markets, actors negotiate securities or currencies. The market is "efficient" if the price fluctuations which occur reflect new information, previously unknown to the operators who then modify their decisions to buy or sell. The price then expresses all known information to the operators and reflects the characteristics of listed securities: their expected return, the undergone risk, their liquidity and finally their tax attributes. If a market is efficient, the price differences between two securities are then an accurate reflection of the differences between the characteristics of listed securities. At any time, new information may alter the course of a stock price. For example, if the experts anticipate higher interest rates, resulting in lower relative performance of securities, they will sell without waiting: stock prices will immediately adjust downward. But if the Central Bank decides not to change its interest rates, the expectation is denied by the facts. This new information is immediately reflected on the level of stock prices. Since, by definition, new information affecting the stock prices were not anticipated, they cause a rise or fall in prices that nobody could foresee: they are unpredictable.

If markets are efficient, then securities having a high level of risk can find buyers only if they offer higher returns than less risky securities.

On this basis, Tobin (1958) proposes a simplification of the calculation of the determination of efficient portfolio: the theory of separation. To choose a portfolio, the separation is first to determine the share of risk-free securities according to the individual's degree of risk aversion. Then, for securities with a high level of risk, the individual should select those expecting to get the highest possible yield.

The risk assessment of different securities can be done through the “Capital asset pricing model” developed by Sharpe (1964). By definition, securities are assets that provide a higher level of risk compared to other assets (for example, a bond). It is therefore normal that the stock market is characterized by higher average returns than the risk-free securities. However, most securities have a different yield of the average yield markets. Sharpe (1964) designated by the Greek letter β this gap-specific to all securities. If the gap is positive (the securities performed above the average), then they are considered more risky than the average and the market expects a higher return to
counterbalance. Otherwise, operators prefer to buy less risky securities with an equal return. If it is efficient, then the market faithfully reflects the relative level of risk.

Merton (1973) and Black & Scholes (1972) focused on derivatives market and options (rights to buy or sell financial instruments at a price fixed at a defined date – at maturity time, the holder is not obliged to exercise his/her right). They conclude that this insurance system eliminates virtually all risks. In financial markets, everyone is then sure of winning at least the equivalent of a risk-free investment if they get a proper insurance through the options. Based on this prediction, a speculative investment fund, LTCM, had accumulated 160 billion dollars in stock options on Russian bonds, considering that these bonds were undervalued compared to their actual risk. The market being supposed to be efficient, sooner or later, investors should be aware of this undervaluation, buying such bonds, and then pushing their prices up. LTCM, thanks to stock options setting a lower price, should have pocketed the price differential. This was exactly the opposite that happened and LTCM found itself unable to exercise their options in September 1998. Only the intervention of the FED prevented the collapse of LTCM from turning into a systemic risk. The confidence in the virtues of formalization and rationality of actors was then deeply shaken.

In summary, the neoclassical approach claims to eliminate all financial risks by spreading them on a multitude of agents. In doing so, in extremely diluting the risks, it considers that it globally minimizes them for society as the whole. Thus, a failure of a financial agent will have limited impact on his/her environment. Such an approach amounts to saying that the negative externalities (6) that he/she is likely to generate are effectively taken into account in the models underlying the behavior of financial agents. Therefore, the agents are encouraged to adopt a strong preference for risky behavior (Shiller, 2004), believing with certainty to realize the most profitable investments. Speculation is widespread, behaviors based on ‘irrational exuberance’ are generalized, the financialized economy become a ‘casino economy’ (Keynes, 1936).

It is this global vision which has been criticized by Keynesian economists.

3 - Keynesian challenge of the neoclassical finance

The Keynesian theory of finance (Keynes, 1936; Orléan, 1999) challenges the Neoclassical assumption of agents' rationality whose mimetic behavior generates speculative bubbles impacting negatively on the economy (Orléan, 1999).

Mandelbrot and Hudson (2004) have contested the hypothesis that daily price variations follow a random walk. If it had been the case, the distribution of observations should have followed a bell curve of Gauss type. The top of the bell being the most frequent observation, the frequency of other observations (in less or in more) is steadily decreasing as the distance from the summit increase. The conclusion is that hazard is ‘ordered’; the further away from the bottom tendency we go, the fewer should be the number of observations. However, Mandelbrot observed that, between 1916 and 2003, the Dow Jones index of American industries has changed more than 4.5% 366 days during that period, while the ‘random walk’ would have given only 6 cases. A variation superior to 7% should occur every 300 000 years. But, it was found 48 times. Mandelbrot conclude that the theory of markets efficiency is wrong. The markets are subject to unpredictable disturbances which have long term effects. They are turbulent, subject to a particular hazard, producer of uncertainty, irregularity and speculative bubbles which, when they burst, produce powerful negative effects on the finance and the economy.

Keynes (1936), to explain how investors select their financial securities, used the metaphor of the beauty contest. He explained that the investment technique is similar to press beauty contests of this period where participants had to select the 6 most beautiful faces from a hundred. A prize was awarded to those whose preferences were the more approaching to the average selection made by all participants. Each competitor had to choose not the faces he thought him/her self to be the prettiest, but those he/she would obtain the best vote by the other competitors - all of whom examined the problem from the same angle. This meant therefore, for each participant, to determine the idea that the average opinion made itself in advance of its own opinion.

This Keynesian analysis is therefore based on mimesis. The objective is to act according to what is believed to be the behavior of the majority. This mode of operation appears to be most common in the financial markets. Thus, Orléan (1999) has systematized this approach in order to demonstrate that markets do not provide the signals that permit a relevant selection of investments to the rest of the economy. An agent operating on a financial market seeks to maximize his/her financial profits. To do this, he/she must determine how other agents will react to a particular event. If he/she correctly anticipates this reaction, he/she maximizes its profit because he/she will anticipate before others price variations - and that alone counts for him. And for the possible consequences on the overall market - speculative bubbles or crash - they are indifferent to them.
This mimetic behavior generates what Orléan (1999) calls a ‘mimetic rationality’ and leads to a price that is ultimately a belief shared by the majority of operators, i.e. a convention. This price emerges because everyone thinks and acts like any other. The agents then adopt the same convention and persuade themselves that this consequence results from this phenomenon because, around these agents, other agents also believe in that consequence. Whether this belief is rational or not does not matter: since each individual believes that this consequence will occur, any agent will adopt behavior that will make it happen. However, once established, it is difficult to challenge convention and replace it with another. This explains that during the development phase of a speculative bubble, agents seem motivated by an ‘irrational exuberance’ (Shiller 2004), anticipating an uninterrupted rise in securities prices. Similarly, when these expectations are reversed, the panic movement arises in financial markets by a massive sale of securities, which helped bring down prices.

Aglietta (2005, 2008, 2009) underlines the impact of financial turmoil caused by the explosion of speculative bubbles on the real economy. In the best case, it results in a liquidity crisis: everybody wants to sell, nobody wants to buy, and the banks stop any credit for fear of recovering bad debts. We enter in a situation of ‘credit crunch’, reflecting the impact of the subprime crisis. Central banks have no other choice but to position themselves as broker of last resort to save the international financial system.

Ultimately, the Keynesian approach demonstrates that financial markets incorporate poorly, contrary to the pretension of Neoclassical models, the presence of negative externalities. Spreading the risk to all employees does not signify eliminate it but systematize it. It is still necessary to help integrate this fact to the financial agents. This is a task that researchers, teachers and pedagogue can possibly pursue.

4 - The role of teachers facing the contemporary crisis: develop internal financial agents by the implementation of an entrepreneurial process

Financial agents generate negative externalities affecting the real economy but do not integrate them. For example, it is the taxpayers who have been systematically appealed to the rescue of non-performing banks.

How to induce the financial agents to modify their behavior so they take into account, in their decisions, the negative externalities that they generate to society?

Law is a possibility of regulation. However, because regulation protects the financial actors and not the community, it has failed to prevent contamination of the financial crisis to the real economy. Other alternatives must be considered. Among them, an adaptation of both the content of teaching and pedagogy used for education would modify the behavior of future agents.

In this context, appropriation of the ‘intropreneurship’ notion by pedagogues, a concept developed by Aimar (2008) on the basis of the Austrian theory of entrepreneurship, is a powerful tool to promote change in students’ performances (Watzlawick, 1974; Parisot & Rossi, 2009). Indeed, this intropreneurship seeks in particular to help people to progressively recognize internal errors which until then prevented them from grasping the whole of profit opportunities in their environment.

The dogmatic character of the Neoclassical approach has impregnated teachers and students minds in finance for over half a century. Education implemented on the basis of the Teacher Centered Model (TCM) and Learner Centered Model (LCM) would, at least in the short term, have few chances to lead to a change in representations (Parisot et al., 2009). The same causes producing the same effects, such a statu quo would have every chance to produce, over time, new financial crises of great magnitude. To minimize this risk, it is therefore necessary to consider adopting a pedagogy whose purpose is to bring the agents (teachers and students) to proceed by themselves the challenging of the economic models they consider to be true.

In this way, it is possible, by implementing teaching on the basis of the Development Centered Paradigm (McCuddy & Reeb-Gruber, 2008), to promote the expression of intropreneurship among students (Rossi and Parisot, 2010). A larger application of this approach would enhance realization of past mistakes and promotes the development of alertness. Thus, students would integrate the negative consequences of economic and financial theories, which would, in turn, generate new profit opportunities likely to change the future behavior of financial students. This would in turn reduce the destabilizing nature of finance and lead to a better coordination of financial and societal interests.

Conclusion

The financial, economic and social consequences of the current crisis call for a change of great magnitude. By helping financial agents to better realize the scope of their past mistakes, researchers, teachers and pedagogues can provide the necessary impulse to start the intropreneurial process. Thus, individuals, driven by the need to change,
will be better motivated to question the quality of their explicit knowledge. They thereby transform information into knowledge (Kirzner, 1978, 1992, 2000) and repel for themselves the boundaries of their own ignorance. This will impact on their actions. Indeed, according to Hayek (1952), acting implies for all individuals to imagine the future image of their own subjectivity. In other words, when an individual is acting, he/she hopes that the future effectively created will correspond to the imagined future. To ensure this equivalence, the individual must be able to control the formation of his/her own values (Aimar, 2008). If he/she succeeds, he/she will seized cognitive profits manifests themselves by an extension of his/her scope of awareness. And who knows, maybe concerning the financial agents, these latter will better integrated into their decisions the societal consequences that their actions do inevitably generate. Finally, finance and society will both gain from that integration.

Endnotes
A regime of accumulation refers to the set of patterns that provide a relatively consistent overall progress of the accumulation of capital, *i.e.* which can reduce or stagger imbalances or distortions that continuously arise from the process itself (Vidal, Baslé & Mistral, 1993).

A mode of regulation refers to a combination of mechanisms contributing to the reproduction of the system, taking into account current economic structures and social forms (Vidal Baslé & Mistral, 1993). Five elements are considered here: the currency, the degree of economic integration within the international division of labor, forms of competition, the rules for government intervention and forms of employment relations.

For example, during the 1990s, to invest in a particular company, the shareholders demanded a return on equity of around 15%.

Without being exhaustive, in addition to the unstable nature of finance, other causes also contribute to the contemporary crisis: the existence of international trade imbalances between developed and emerging countries; the increasing inequality of wealth between countries and within each country; the challenge of production modes and consumption modes which are high resource-consuming and do not sufficiently take into account of the environmental dimension.

Prize that it is usual to abusively call, in common parlance, by “Nobel Memorial Prize of Economic Sciences”*. The 6 neoclassical authors who appear in this article are: Markowitz, Sharpe and Miller (“Nobel Prize” in 1990), Tobin (“Nobel Prize” in 1981), Merton and Scholes (“Nobel Prize” in 1997).

There are negative externalities when actions of an individual or trade-offs between individuals had a negative impact of the well-being level of a third part non directly interested to the action or to the transaction. For example, in the case of the current financial crisis, the rise of unemployment for individuals whose corporations were bankrupt matches this definition.

References


Concept mapping in Problem-based Learning

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Rationale for the study
With this study we want to make a contribution to the theory and practice of Problem-based learning (PBL) by testing the impact of concept mapping in step 4 of the seven step method on the process and output of PBL.

Theoretical framework

Problem-based learning (PBL) is an approach to education which promotes collaborative, constructive, contextualized, competency-oriented, self-directed, and student-centered learning.

In problem-based learning students meet twice a week in groups of 12 to discuss and report about problems which have been presented to them. Schmidt (1982) defined a problem as a set of phenomena in need of explanation in terms of underlying principles, processes and mechanisms. While working on the problem the study group uses a systematic approach called the “seven step method” (7SM):
Step 1: clarify terms and concepts not readily comprehensible
Step 2: define the problem
Step 3: analyze the problem
Step 4: draw a systematic inventory of the explanations inferred from step 3
Step 5: formulate learning objectives
Step 6: collect additional information outside the group
Step 7: synthesize and test the newly acquired information.

Based on more than 25 years of experience with problem-based learning at Maastricht University, Moust, Van Berkel & Schmidt (2005) noticed some ‘signs of erosion’. Particularly their observation that students are “skipping the brainstorming and elaboration phases (steps 3 and 4)” has serious consequences for the quality of the PBL process.

Learning with concept maps

“Concept maps are graphical tools for organizing and representing knowledge” (Novak & Cañas, 2008, p.1). They include concepts (a perceived regularity in events or objects, or records of events or objects, designated by a label) and lines (including a description of the relationship) linking two concepts, creating a proposition (statement about some object or event in the universe).
Concept mapping can facilitate learning while it supports the activation of prior knowledge, forces students to be explicit about what they know and do not yet know about a subject area. The concept map reflects an individual’s or a group’s current level of understanding and seems particularly suited as a scaffolding tool for step 4 in the PBL process (Novak & Gowin, 1984).
The effect of CM on learning in PBL has been reported in studies by Johnstone & Otis (2006), Hsu (2004) and Rendas, Fonseca & Rosado Pinto (2006).

Problem statement

Since experiences with PBL have indicated some points for improvement, and concept mapping has demonstrated its potential to add to the learning process and conceptual understanding of students, it is hypothesized that implementing concept mapping in a problem-based program will have a positive effect on the performance of the participants by providing them with a practical instrument to properly deal with step 4 of the 7SM.
So our problem statement reads:
Does implementation of concept mapping enhance the process and output of Problem-based learning?

Method
The study will be structured according to a quasi-experimental pretest-posttest control group design with concept mapping as treatment variable.
The studies will be conducted in an institute of higher education offering a four year problem-based hospitality management curriculum. The total number of students enrolled is approximately 2400. 2 – 4 PBL-groups from the first, second and third year will be included in the study. Half of the PBL-groups will be assigned to the experimental condition (concept mapping), the other half will serve as control group. Two PBL-problems from the context of international hospitality management will be used. The problems are preferably embedded in an existing module. If that would not be feasible, the experiments will be performed separate from the regular curriculum. Students in the CM-condition will not receive a specific training in concept mapping. They will just be provided with an A4 containing a 10-step approach and some illustrative examples.

Data sources & Instrumentation
The PBL-groups in action will be observed and audio- and video- taped during the start-up stages of a problem. Minutes and the output of steps 1-5, particularly the concept map and the list of learning goals will be collected, stored and analyzed. Participants will also be asked to fill out a questionnaire to describe and evaluate their study performance and to evaluate the meeting.

Data analysis & Results
The concept maps will be analyzed following the scoring rules as suggested by Novak & Gowin (1984). Correlation and regression analysis will be applied to investigate the relationships between CM process and product scores on the one hand and variables like number & quality of learning goals, test scores, and study time on the other.

Implications
The theoretical significance of the study is its contribution to the PBL paradigm, the theory on knowledge construction in collaborative teams, the theory on knowledge representation and knowledge sharing, and to the theory on concept mapping. The practical significance of the study is its contribution to the practice of PBL by introducing concept mapping as a way to operationalize step 4 in the seven step procedure to enhance both the process and output of PBL.

References
Can Empirical Research on Education be Replaced by Common Sense?

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Abstract: Discussions on various pedagogical issues such as instructional quality reveal that many people cannot imagine that research findings could possibly not be consistent with their own personal experience. They even consider some research findings in the field of pedagogy self-evident and consequently the research a waste of money and time. If these people were right, they would be able to distinguish right from wrong statements (concerning for example several issues of instructional quality) without prior knowledge of relevant research findings. The study described in this paper empirically explores whether this assumption is correct. The results will show impressively that it is not and that it is therefore not safe to rely (only) on one’s experience, beliefs and common sense when it comes to answering pedagogical questions.

Introduction

Discussions on instructional quality often reveal that many people believe they know what constitutes and influences good teaching. After all, they argue, they went to school themselves for many years and have their own first-hand experience. It seems that McKeachie (1996) gained a very similar impression:

Some years ago I was a member of a committee administering grants to senior faculty members who proposed to construct or modify their courses to emphasize thinking. At an end-of-the-year dinner for the participants, the discussion turned to student ratings, and the usual criticisms were raised.

"Students don't really appreciate a good course until they are out of college".
"Students can't really judge how well they are learning".
"Students only give high ratings to courses with low standards".

It happened that Herb Marsh, a professor at the University of Western Sydney, was visiting me at the time, and I had invited him to be my guest at the dinner. He is probably the world’s leading archer on student ratings of teaching, and as a guest he kept quiet as long as he could. But finally he could stand it no longer and said, “You know, there's a good deal of research evidence on the issues you've raised”.

A prominent historian immediately retorted, “We don't care about research evidence; we have our own experience” (McKeachie 1996, p. 3).

A lot of people simply cannot imagine that research findings could possibly not be consistent with their own experience or the observations that they have made in their everyday life. They even consider some research findings in the field of pedagogy self-evident and consequently the research a waste of money and time (Diekmann 2007, p. 25). If these people were right, they would be able to distinguish right from wrong statements (e.g. about several issues of instructional quality) without prior knowledge of relevant research findings. The study described in this paper explores if this assumption is correct.

Objective of the paper

This paper addresses the question of whether people can safely rely on their common sense when answering pedagogical questions. It examines whether people are able to “predict” or “anticipate” research findings by simply referring to their experience and their observations in everyday life. It focuses on people’s beliefs in the pedagogically relevant fields of teaching behaviour and teaching styles, conditions for teaching and educational quality. Respondents were asked to indicate if they thought that a number of statements concerning these fields were actual findings of educational research or not.
Method
A respondent sample of 182 students of business education at two Austrian universities were asked to indicate if they thought that the statements on a questionnaire they were given were actual correct results of empirical research on teaching or not. The eight statements cover different aspects of instructional quality that have been thoroughly researched with extensively consistent findings, such as the relationship between class size and student achievement as well as its effect on emotional and motivational variables, the influence of the variation of teaching methods on student achievement and the question of whether one teaching method can be found to be consistently more effective than another. Additionally, the respondents were asked to explain their reasoning after each statement.

As all respondents were in at least their fifth semester of their studies of business education, the results might be positively biased due to the fact that students might not need to rely on common sense because they have foreknowledge of the correct answer. This will be taken into consideration when discussing the results of the study.

On the other hand, it seemed particularly beneficial to survey students of business education because they are supposed to be interested in answering the questions correctly and to be motivated to tell which of the following statements (see table 1) are actual correct findings of empirical educational research or not and are therefore true or false.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Description</th>
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<tbody>
<tr>
<td>1. Statement 1</td>
<td>Findings of empirical educational research show that students generally learn more effectively (in terms of knowledge acquisition) by learning independently than by being instructed by a teacher.</td>
</tr>
<tr>
<td>2. Statement 2</td>
<td>Findings of empirical educational research show that students learn statistically significantly more in smaller classes (of 18-20 students) than in large classes (of 25-30 students).</td>
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<tr>
<td>3. Statement 3</td>
<td>Findings of empirical educational research show that teachers and students feel better in smaller classes (of 18-20 students) than in large classes (of 25-30 students).</td>
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<tr>
<td>4. Statement 4</td>
<td>Findings of empirical educational research show that the more teaching methods are employed, the higher the students’ learning achievement (in terms of knowledge acquisition) will be.</td>
</tr>
<tr>
<td>5. Statement 5</td>
<td>Findings of empirical educational research show that the teaching style is more important to the students’ learning achievement than the teacher’s knowledge of the subject because subject matter can also be found in textbooks and on the internet.</td>
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<tr>
<td>6. Statement 6</td>
<td>Findings of empirical educational research show that student ratings of teachers are not only significantly influenced by instructional quality but also by the extent to which students (dis)like their teacher.</td>
</tr>
<tr>
<td>7. Statement 7</td>
<td>Findings of empirical educational research show that teachers make no difference for student learning because student achievement mainly depends on cognitive abilities, prior knowledge, interests, motivation and the support students get at home.</td>
</tr>
<tr>
<td>8. Statement 8</td>
<td>Findings of empirical educational research show that innovative teaching methods generally cause higher learning achievement (knowledge acquisition) than conventional teaching methods.</td>
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</tbody>
</table>

These statements refer to the following four main fields of instructional quality: teaching methods and their contribution to learning achievement (statements 1, 4 and 8), class size (statements 2 and 3), competencies of teachers (statements 5 and 7) and teacher evaluation (statement 6). These are very often heatedly debated and discussed and therefore make a lot of people express their subjective theories (Beck & Krapp 2001). Of course there are other relevant educational issues that could also have been addressed and that may become the subject of future research.

Results
Statement 1: individual learning and knowledge acquisition
“Findings of empirical educational research show that students generally learn more effectively (in terms of knowledge acquisition) by learning independently than by being instructed by a teacher”. True or false?
Table 2: Results for statement 1

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This statement is false because it argues that individual learning is generally more effective than being taught by a teacher. Firstly a number of qualifications must be fulfilled to allow effective individual learning, such as sufficient prior knowledge of the students, motivation, appropriate learning strategies and techniques. Some students do not meet these requirements and learn more effectively when being taught by a (good) teacher. Secondly, there is no teaching method that is consistently more effective than other ones regardless of which learning objectives are to be achieved, the number of students that have to achieve them, the available time and other learning conditions and many other variables influencing the teaching and learning process (Weinert & Helmke 1995).

Learning outcome is rather dependent on the quality of the method, the way the method is employed, prior knowledge and cognitive abilities, how experienced, interested and motivated teachers and students are, and on many other factors. Weinert und Helmke (1995, p. 136) find that “an old piece of educational wisdom is that no single method of instruction is the best for all students and for all learning goals, and that even very effective instructional procedures can have deficits with respect to single criteria”.

Nevertheless more than two thirds of the respondents think that statement 1 is true (see table 2). The explanations they give for their decision sound very plausible. They think that individual learning gives students enough time to relate new subject matter to what they already know about the subject. The respondents consider it a more active way to learn and therefore more stimulating and interesting for students who have to be very attentive.
and focused. All these conditions are conducive to high learning achievement. This may hold true for some students but most certainly not for all and not for each and every learning task like it is suggested in statement 1.

Helmke (2006) has already mentioned that a kind of “method myth” might exist which considers innovative teaching methods to be generally more effective than conventional methods. Among students of business education, this myth is a widespread belief.

Statement 2: class size and learning achievement

“Findings of empirical educational research show that students learn statistically significantly more in smaller classes (of 18-20 students) than in large classes (of 25-30 students)”. True or false?

Table 3: Results for statement 2

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<td>8</td>
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More than 80% of the respondents think this statement is true (see table 3). They explain that small class size enables teachers to support their students better and to involve them more intensely in the teaching process. They can ask more questions, give more detailed explanations to the students’ questions and take the (cognitive and affective) differences between students more into consideration. Finally they argue, fewer students make less noise and this facilitates teaching and fosters the students’ attentiveness.

However, statement 2 is also false. Research on class size and its effect on learning achievement mostly has shown that students may learn more in smaller classes but that the difference to larger classes was not (statistically) significant. The effect becomes significant only when comparing “normal” class size to very small classes of less than 15 students. Wilberg & Rost (1999) carried out a study on the effect of class size in 665 classes at the secondary level in 15 (mainly) European countries, and they found no consistent relationship between class size and learning
achievement, only non-systematic effects. Hence they conclude that there is no general correlation between a smaller class size and higher learning achievement. The heterogeneity of the correlations found in different studies rather indicates that there might be another variable accounting for differences in learning achievement. Teaching behaviour might be such a variable: smaller classes only make sense if the teacher is able to adapt to different teaching conditions and use didactic possibilities which are rather appropriate to smaller classes. Put differently, if the teacher teaches small classes the same way s/he teaches larger classes, why should there be a difference in learning achievement?

**Statement 3: class size and well-being**

“Findings of empirical educational research show that teachers and students feel better in smaller classes (of 18-20 students) than in large classes (of 25-30 students)”. True or false?
Table 4: Results for statement 3

<table>
<thead>
<tr>
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<th>60.</th>
<th>61.</th>
<th>62. Valid Percent</th>
<th>63. Cumulative Percent</th>
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<td>66.</td>
<td>67.</td>
<td>68. 8% 4.0% 0.0%</td>
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<td>74. 1% 6.0% 0.0%</td>
<td>75. 1% 0.0% 0.0%</td>
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<td>2</td>
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<td>79.</td>
<td>80. 1% 0.0% 0.0%</td>
<td>81. 0% 0.0% 0.0%</td>
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<td>8</td>
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<td>85.</td>
<td>86. 0% 0.0% 0.0%</td>
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<td>88. Total</td>
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<td>91.</td>
<td>92. 0% 0.0% 0.0%</td>
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Again, more than 80% of the respondents think that this statement is true (see table 4) – and it really is. The respondents’ explanations for their reasoning are very similar to those for statement 2. Actually, research shows that
teachers and students feel better in smaller classes. Smaller class size has a considerable effect on teachers’ well-being in class and also a (comparatively smaller) effect on students’ well-being (Ingenkamp, Petillon & Weiß 1985).

**Statement 4: teaching methods and learning achievement**

“Findings of empirical educational research show that the more teaching methods are employed, the higher the students’ learning achievement (in terms of knowledge acquisition) will be”. True or false?

Table 5: Results for statement 4

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<td>97. Cumulative Percent</td>
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<td>122. Total</td>
<td>123</td>
<td>124</td>
<td>125.</td>
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Almost two thirds of the respondents think that this statement is true (see table 5) because a variety of teaching methods would make the lessons more interesting and would support the students’ attentiveness and motivation. Different teaching methods could well appeal to a greater diversity of learning styles and therefore reach more students than a single method. These explanations are basically very reasonable, and in fact, methods have different strengths and weaknesses which can only be counterbalanced by using a variety of methods.

But still, statement 4 is false because it implies a linear relationship (a correlation) between the number of methods and the level of achievement, another “method myth” stated by Helmke (2006). If statement 4 were true, four methods would be more effective than two or three and eight methods would be more effective than five, for example. There is no empirical evidence for such a linear relationship.

Helmke found in his MARKUS-study that the teachers who employed the highest number of teaching methods did not achieve the highest learning outcomes as measured by student achievement (see Helmke & Jäger 2002). The most successful teachers were those who employed two different teaching methods in addition to “conventional” teaching (followed by those who used three additional methods and by those who employed one additional teaching method).

Statement 5: the importance of the teacher’s knowledge of the subject

“Findings of empirical educational research show that the teaching style is more important to the students’ learning achievement than the teacher’s knowledge of the subject because subject matter can also be found in textbooks and on the internet”. True or false?
More than one third of the respondents think this statement is true (see table 6), but it is definitely not. In fact, the teacher’s knowledge of the subject is an indispensable prerequisite to her/his didactic skills and his ability to teach the subject effectively. Only by knowing a subject very well can a teacher explore what is important, what is difficult to understand or which examples can be given to illustrate a matter (Dubs 1995, p. 19). There is no didactic competence without a profound and thorough understanding of the subject matter. A teacher therefore needs to be an expert on the subject s/he is supposed to teach (e.g. Aebli 1991).
These arguments are also used by those 60% of the respondents who – correctly – think that the above statement is false. There is a lot of empirical evidence for these arguments (e.g. Bromme 1997). The teachers’ knowledge of the subject helps them to stress important aspects and interrelations, it improves the teachers’ explanations and their ability to cope with the students’ questions and their contributions and enables them to prepare more challenging questions and more demanding assignments for their students (Stein, Baxter & Leinhardt 1990).

**Statement 6: student ratings of teachers**

“Findings of empirical educational research show that student ratings of teachers are not only significantly influenced by instructional quality but also by the extent to which students (dis)like their teacher”. True or false?

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Table 7: Results for statement 6

About three quarters of the respondents consider this statement true (see table 7), and this is correct. An empirical study of factors influencing student ratings of accounting teachers at Austrian “Handelsakademien” (commercial colleges) has shown that teaching behaviour (as it is perceived by the students) has the strongest impact on student global ratings. Still, the students’ sympathy for the teacher has a statistically significant influence. Though this effect is considerably smaller than the teaching behaviour, it is the strongest effect of a bias on global ratings that cannot be explained by any other factor in the model (Greimel-Fuhrmann 2003).

Most of the respondents argue that it is only human that people give slightly higher ratings to persons they like which they find to be unfair but understandable.
Statement 7: the teacher’s impact on learning

“Findings of empirical educational research show that teachers make no difference for student learning because student achievement mainly depends on cognitive abilities, prior knowledge, interests, motivation and the support students get at home”. True or false?

Table 8: Results for statement 7

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<th>186</th>
<th>187</th>
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<tr>
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<td>214</td>
<td>215</td>
<td>216</td>
<td>217</td>
</tr>
</tbody>
</table>

The vast majority of respondents consider this statement false (see table 8), and it definitely is. However, 11% of the respondents think it could be true that teachers make no difference for student learning.
The students’ cognitive abilities, their prior knowledge, interests, motivation and the support they get at home considerably influence student learning achievement. However, these are factors that cannot be (easily) influenced by school. Of those factors that can be changed and therefore improved, instructional quality – especially teaching behaviour and teaching style – is the most powerful. Teachers make a difference because they motivate students, attract the students’ attention by asking the most interesting questions, make things clear and understandable and are repeatedly found to account for a large portion of the variance of student achievement (Fraser et al 1987, Krumm 1998) while statistically controlling for students’ cognitive and affective variables.

**Statement 8: direct instruction and other teaching methods**

“Findings of empirical educational research show that innovative teaching methods generally cause higher learning achievement (knowledge acquisition) than conventional teaching methods (like direct instruction)”. True or false?

**Table 9: Results for statement 8**

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<td>220</td>
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<td>222. Cumulative Percent</td>
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Almost one out of two respondents considers this statement true (see table 9). They argue that innovative teaching methods like open learning, project-based learning or cooperative learning are more motivating and engaging for students. Additionally, the students learn how to work independently and in groups, how to organise learning and how to solve problems. This may be true for some students and some learning arrangements but definitely not for all. The statement is therefore false and is another “method myth” (Helmke 2006) like statement 1.

Conclusion and discussion
The results show that it is not safe to rely solely on common sense when pedagogical questions need to be answered. The results of scientific research cannot be replaced by experience and personal beliefs. Between 11% and 83% of the respondents were wrong with their guesses. In two out of eight cases, between 30% and 50% of the respondents made wrong decisions and in three out of eight cases the percentage exceeded 50%. The arguments that the students offer to explain their reasoning are very similar. Although all sound very plausible, there is in fact no empirical evidence to support these beliefs.

These results lead to the conclusion that most people’s common sense does not correspond to actual empirical findings of educational research. This holds true even for those who study education and are therefore supposed to be interested in pedagogical matters and possibly be familiar with actual results of educational research. It is very likely that the results would have been even poorer.

Even if personal experience and intuition enabled people to anticipate research findings, research itself would not be dispensable. Research is not less interesting and valuable just because our assumptions are confirmed. As experiences gained in everyday life lead to uncertain subjective theories, systematic examinations are needed to confirm what we expect to find and to learn more about the validity and application of theories.

References
How to Instruct Economics Students to Think Critically? Efforts to Overrule the Autonomous Mind

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1 Avans University of Applied Sciences, Breda, The Netherlands
2 Institute of Psychology, Erasmus University Rotterdam, The Netherlands

Introduction

Critical Thinking (CT) can be defined as judging in a reflective way on what to do or what to believe (APA, 1990). CT skills are associated with better learning and transfer and are inextricably linked to the quality of decision making in dynamic business environments (Chonko, 1993; Klebba & Hamilton, 2007). However, business educators recognize the need to facilitate the learning of CT skills (Celuch & Slama, 1998), those CT skills are seldom explicitly taught and educators are often unsure when, where and how to foster CT (Jones, 2007). The large amount of existing CT literature (for a meta-analysis see Abrami et al., 2008) is predominantly descriptive and pays limited attention to the effectiveness of CT instructions embedded in certain domain-specific tasks. Therefore, we conducted an experiment on the effectiveness on CT development and learning of different types of CT instructions for novice (1st year) and advanced (3rd/4th year) economics students.

CT development is addressed in this study from a dual processing and a cognitive load perspective. Dual processing models of reasoning assume two distinct cognitive systems to be at work, which have been described as two minds in one brain: the autonomous mind and the rational mind (Evans, 2003; Stanovich, 2009). The autonomous mind has a rapid, automatic nature and requires little reflection. Decision making using the autonomous mind is based on past experiences Although this is pragmatic in many situations, it might result in thinking errors such as biases and fallacies unless the rational mind overrules these automatic responses by explicit reasoning efforts like CT. The rational mind, however, is slow and sequential in nature, and requires the exclusion of attention to other matters. Thus, the rational mind draws more heavily on working memory (WM) capacity, and WM capacity is limited. Also, students’ level of expertise determines how much load a task imposes on WM, and might therefore differentially affect the effectiveness of CT instructions. That is, from a cognitive load perspective (Sweller, Van Merriënboer, & Paas, 1998), CT can be seen as a dual task. Complex learning tasks already impose a high load on students’ limited WM capacity, leaving little room for additional cognitive processes such as CT. Because the complexity of a learning task is higher for novices than for advanced students who have more prior knowledge of the task (Sweller et al., 1998), the advanced students presumably have more cognitive capacity available for CT.

It was hypothesized that 1) CT instruction before learning tasks combined with CT prompts during learning tasks (self-explanation or activation prompts) would foster learning and CT skills compared to CT instruction without prompts, which would be better than no CT instruction at all, and 2) advanced students would benefit more from all types of CT instruction than novices.

Method

Participants and Design

Participants were 168 students of the School of part-time studies of the ‘Bachelor of Business Management Studies’, and the ‘Bachelor of Marketing’. A 2 x 4 factorial design was used, with factors Expertise (novice/advanced) and CT Instruction (no / instruction / instruction + self-explanation prompts / instruction + activation prompts).

Materials and Procedure

Within each expertise level, participants were randomly assigned to one of the four conditions. All participants first completed a CT skill test (cf. West, Toplak, & Stanovich, 2008) and a thinking dispositions test (cf. Stanovich & West, 2007; Cacioppo, Petty, Feinstein, Blair & Jarvis, 1996). Then, participants in the experimental conditions received a general critical thinking instruction in the form of a powerpoint presentation, while participants in the control condition watched a video unrelated to CT or economics of equal duration. After that, all participants worked on a business case that included several tasks, with or without CT prompts depending on their assigned condition. Finally, all participants again completed a general CT skills test, comparable, but not identical to the first test. After each task in both CT tests and the business case, students rated their invested mental effort (a measure of the
experienced cognitive load; Paas et al., 2003).

Results
Data have been collected and are currently being analyzed; results will be available well before the Edineb conference.

References
Using PBL and ICT tools to facilitate the process of acculturation of foreign students

Katerina Bohle Carbonell, Bart Rienties, Maastricht University, Susan Niemantsverdriet, Hogeschool Leiden, bart.rienties@maastrichtuniversity.nl

The increasing globalization, internationalization and Europeanization processes have had an impact on the heterogeneity of the students population entering postsecondary education (Brants & Struyven, 2009). A large number of students decide to study at a university away from their home country in order to gain international experience and to become more competitive in the international labor market. At the same time a growing number of higher education institutes have become more and more interested in the international market of bachelor and master students (Van der Wende, 2001). However, with an increasingly heterogeneous student population, several teachers and educators are indicating that some international students are not sufficiently academically and socially integrated (Morrison, Merrick, Higgs, & Le Métai, 2005). As a result, several institutes are trying to assist the acculturation process of foreign students by designing and implementing getting-acquainted courses, summer courses, or preparatory courses.

The framework adopted for analyzing the online educational environments at the institutes is derived by combining the Community of Inquiry model proposed by Garrison et al. (2000) with the Online Remedial teaching model of Rienties et al. (2006). The framework of Garrison et al. (2000) presents a worthwhile educational experience as embedded within a Community of Inquiry which includes teachers and students. The model presents the learning process as the result of the interaction of three core elements: cognitive presence, social presence and teaching presence. While the Community of Inquiry framework is focused on online courses, in the context of remedial and preparatory courses the role of interaction, adaptivity, feedback and ubiquitous learning are also important factors (Brants & Struyven, 2009; Rienties et al., 2006). Therefore, in this paper we have integrated both approaches.

This research aims to answer the following question: can the acculturation of foreign students be facilitated by the choice of a certain pedagogical approach together with the usage of a specific ICT tool?

Method

In this paper, we will conduct an in-depth analysis of the design and implementation of seven online summer courses at five higher educational institutes in the Netherlands using a mixed-method approach (Järvelä, Järvenoja, & Veermans, 2008; Järvenoja & Järvelä, 2005). The institute involved adopted several pedagogical scenarios (self-directed learning (SDL), Problem-Based-Learning and Project-Based Learning (PBL)) and used different ICT tools, from individual online courses (ALEKS and Math XL) to online group discussions and lectures (discussion forums, chats, web-videoconferencing, etc.). The purpose of this research is to determine which pedagogical approach (PBL vs. SDL) and which ICT tools (individual online course vs. group discussions/videoconferences) can help foreign students to socially and academically adjust in a foreign country.

In total 202 respondents completed an online questionnaire concerning their satisfaction about the online course and the facilitation of their acculturation. This questionnaire, which has been developed for online remedial education courses and implemented and validated at Maastricht University (Rienties et al., 2006), consists of 60 questions on a five-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree) and 9 scales, namely ‘course design’, ‘course material’, ‘goals and tasks’, ‘learning satisfaction’, group collaboration’, ‘assessment’, ‘instruction’, videoconference/ICT tools’ and ‘acculturation’.

Based upon the results of the questionnaire, several focus group discussions will be initiated with participants and teachers in order to obtain a deeper understanding of the underlying findings.

Results

The quantitative data analysis will be completed in February/March 2010. Afterwards, the semi-structured qualitative focus-group discussions will be held in March-April 2010. The results will be integrated into our final full paper for EDINEB.

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References
Digital inequality beyond national borders among teenagers

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Introduction
This paper sets out to review and verify various notions of digital inequality among secondary-school pupils in relation to socio-spatial factors. It is structured in the following manner. In the opening section, we present the findings of existing studies; we clarify the terms used, the limitations, the methodology and our point of view. Next, we outline our exploratory study into teenagers online in France and Britain. We then we present the findings of our study that we feel are important for policy-makers and secondary-school educators. We conclude with research questions that should be addressed in the context of Internet user behaviour beyond national borders.

Studies show that the diffusion of Information and Communication Technologies (ICTs) has been far from even; some neighbourhoods have high-speed Internet access and others have no access at all (Hawkins and Oblinger, 2006). Much work has been undertaken on the diffusion of these technologies particularly in the field of digital exclusion; non-users and people who resist technology (Lenhart, 2002; Cushman and McClean, 2008). It is widely acknowledged that disparities in Internet access arise from socio-demographic variables especially age, education, income and profession (Olivier, 2009). Very few studies however have looked at digital inequality across different neighbourhoods (urban versus suburban, rather than urban versus rural). No known studies available in the public domain have compared French and British teenagers online to explore urban-suburban disparity.

Aim
This enquiry uses a cross-discipline approach to explore digital inequality among teenagers residing in two distinct neighbourhoods in France and Britain. The study draws from literature in the fields of marketing, consumer behaviour, youth culture and urban studies (French and English-language sources). It builds on existing British studies into socio-economic disparity in “traditional communities” (Economist, 2009a: 39) by comparing Internet user behaviour in urban and suburban areas beyond national borders rather than studying it from a national or monolingual perspective. The study focuses on one of the fastest growing Internet user groups: young people (Fox, 2004; Frydel, 2006), commonly referred to as the digital natives, distinguishing them from other groups of Internet users. Survey method was chosen to explore the Internet-based activities of teenage school pupils (aged 13-16). The schools chosen for the study are situated in north-west England and south-east France.

The aim of using these two locations is to determine the extent to which there is digital disparity (urban-suburban) among young Internet users and whether any difference is noticeable in both countries in the same way. The study therefore contributes to the growing body of literature on the younger generations of Internet users and digital inequality. It is expected that the survey will reveal a number of user trends that cross social and linguistic boundaries, and certain other activities that are specific to one country.

Existing studies
A growing body of literature focuses on Internet user behaviour among young adults to further our understanding of the psychological drivers, attitudes and motivations of today’s teenagers online. Early studies of the digital divide focused mainly on how to reduce the gap between those who have Internet access and those who do not. Later studies centred on the “second-level digital divide” (Zhao, 2009: 55) or “urban digital divide” (Crang et al. 2006: 2551) to identify inequalities of Internet usage across different user groups. The work of North, Snyder and Bulfin (2008) indicated a strong link between technology use and social class; the link between cultural awareness and living standards is thought to produce a socially-entrenched digital inequality rather than an economically-entrenched digital divide. It is thought that economically disadvantaged users have a ‘taste for the necessary’ approach, rather than a playful or exploratory view of using the Internet (Robinson, 2009). These views are consistent with research into digital inclusion by Hamon (2006) as well as Livingstone and Helsper (2007).

Digital inequality refers to inequality in the access and use of ICT (DiMaggio et al., 2004), particularly the Internet

Extending the data sample of a parallel study (by one of the authors) using matched subjects aged 20-70
Zhao (2009) suggested that there is an inner-city versus suburban differential in the adoption of *killer applications*\(^{23}\) by teenagers; suburban teenagers (usually middle-class) are more likely to be earlier adopters of the latest technological devices than inner-city users (often from low-income families). As a result of the known disparity in the basic literacy skills between inner-city and suburban teens, inner-city teens are more likely than suburban teens to use photo-based MySpace, whereas suburban teens are more likely than inner-city teens to use Instant Messaging (such as MSN) which requires a higher level of digital literacy, plus reading and writing at a fast pace. A study undertaken by Hargittai and Walejko (2008) put forward the notion that the extent to which young adults share creative materials online (video, music, writing and artistic photography) is directly related to a person's socioeconomic status as measured by parental schooling. This view challenges previous studies which claim that differences in Internet use among population segments are fading (Wasserman and Richmond-Abbot, 2005; Bouwman *et al.*, 2008).

Many of these studies have been undertaken in English-speaking urban communities (specifically USA, Canada, UK and Australia). There is a general lack of data concerning digital inequality across metropolitan areas of France. This absence seems to reflect both a gap in knowledge and methodology, highlighting the difficulties in gathering comparable data across national borders. There are two possible explanations for this gap; firstly, digital inequality is a relatively new area of study and is often undertaken in a monolingual context; and secondly, the majority of ‘périurbain’\(^{24}\) projects in France fall largely in the realm of the public sector, and are heavily influenced by political and ecological decisions (Braemer, 2008). In contrast, urban projects in the UK are usually managed by partnerships between public, private and voluntary organisations - with the focus on enabling active citizenship\(^{25}\) and the role of ICTs in the regeneration of urban neighbourhoods (Kingston, 2007). This finding is consistent with research into urban digital inequality by Crang *et al.* (2006) in the UK, as well as Hsieh *et al.* (2008) in the USA.

How applicable are these notions of urban-suburban disparity to non Anglo-Saxon communities - i.e. the French context? Urban geography is a major factor to take into account. In terms of etymology, the French for ‘suburb’, *banlieue* (ban + lieue), has a historic context: literally “excluded” from the city proper, yet “subject to the authoritative dictates of [its] power structure(s)” (Fielder, 2001: 271). French mainstream media coverage often emphasize the problems of the *banlieue*: violence, single-parent families, low academic achievement, high unemployment (Russell and Harsin, 2009), referring to the area as “beyond the cultural periphery (and the périphérique)” (Archer, 2010: 102). In this respect, there is a certain similarity between the suburbs in France and the inner-city communities in Anglo-Saxon countries. This view is supported by urban studies (for example, Hayden and Ball-Rokeach, 2007) that advocate community technology projects to encourage civic participation and empowerment.

Market research carried out in France by IPSOS (2008) found Internet access as widespread in the *ZUS* (Zones urbaines sensibles) or ‘deprived urban areas’ as across the rest of France; suggesting that the only difference that exists between urban and suburban Internet users is the nature of the activities undertaken online, and not the availability of Internet access. In a British study, Devins, Darlow and Webber (2008) found that young Internet users living in “less affluent areas” (p.54) are less likely to access commercial services and more likely to download music and games than Internet users living in more prosperous areas. And there are other factors to consider...

In the early 2000s, France had a small percentage of Internet users, but it then grew faster than in the UK or USA (Peckham, 2007) and the gap has been progressively closing. The work of Egea, Menendez and Gonzalez (2007) shows that there are many diverse entry barriers to Internet adoption arising from location-related factors. In the 1980s, the French were early adopters of Minitel and saw no immediate need to adopt the Internet. The Internet was perceived as a competing technical standard and not as “the architecture for the information society” (Brousseau, 2003:49). Access to the Internet depended on proficiency in English for both software and content, which imposed a language hurdle in the early years of Internet developments. Much progress has been made since then in terms of introducing multilingual content and nationwide Internet access.

\(^{23}\) An application or service that is reason enough to buy a device or sign up to a subscription

\(^{24}\) The spatial expansion of cities

\(^{25}\) Enabling citizens to participate in the delivery and management of everyday services in their neighbourhood
Cross-cultural literature suggests that patterns of technology adoption can be ascribed to different cultural environments (Phillips and Calantone, 1994; van Dijk and Hacker, 2003; Lee et al., 2007). The work of Hofstede (1980) has been immensely influential over the past quarter century. It has been used to illustrate adoption patterns and Internet use in different cultural settings, although criticisms of his methodology are numerous (McSweeney, 2002). Internet statistics available in the public domain (such as Internet World Stats) suggest that cultural difference does not predict difference in Internet use and adoption across borders. Indeed, growth in Internet usage over the last decade (1999-2009) suggests that cultural models do not (or no longer) apply to Internet adoption.

Taken as a whole, the literature suggests that a wide array of factors, particularly geographic location and socio-economic indicators, seem to influence the Internet user behaviour and that this is especially noticeable among teenage users.

Bearing in mind the dynamic speed of technological developments and the rapid evolution of user behaviour, we set out to investigate the extent to which the notions put forward in the literature can be applied in a wider context in order to further our understanding of teenage Internet user behaviour in France and Britain.

Limitations

This type of research raises a number of issues, including rigueur and ethics. It is difficult to obtain reliable statistics on digital inequality using secondary data; published measurements of Internet activity are often fallible and research methods differ from country to country. This is a sensitive and difficult area of research that is often misrepresented by popular commentary and “media-spread moral panics” (Hasebrink, Livingstone and Haddon, 2008: 43). Secondly, as much of the literature was developed in Anglo-Saxon countries, it was uncertain that the theories of user behaviour would apply to the French context; and it also raised the question of applying notions of urban-suburban disparity beyond national borders. Thirdly, the dynamic evolution of technology and Internet user behaviour is such that this type of research is quickly out of date. Lastly, a relatively small population is used in the survey and therefore caution needs to be taken when extrapolating from the study to the wider public. It is acknowledged that further research (interviews and case study) would be required to monitor ongoing evolution of Internet trends, and thus provide triangulation.

Hypothesis

The hypothesis developed in this study was based on existing literature that identified trends emerging in Internet user behaviour in 2007-2008. The literature generated 2 assumptions. It led us to believe that firstly, social factors would influence Internet access, causing digital inequality; and secondly, that culture and language would determine Internet use, causing divergence.

The findings of our study suggest that by 2009 user behaviour had evolved in France and Britain. There is much less disparity than the literature led us to believe. There are in fact strong signs of convergence for a number of sites and services.

Methodology

To test the hypothesis, survey method was chosen (see appendices A). Half a dozen secondary schools were considered for the survey, based on the information contained the OFSTED school reports (UK government inspectors) of March 2008, Schools Guide UK and the Direct Gov website. To avoid bias, discussions were held with the local education authority (LEA) to identify secondary schools that represented different neighbourhoods; an inner-city setting and a suburban setting. The LEA asked for complete confidentiality concerning the identity of the schools and the results of the survey. As a result of these discussions, two large secondary schools were chosen for the British sample. These two schools were used to represent teenage Internet users from 2 distinct zones; a marginalised neighbourhood (hereafter referred to as ‘Urban UK’) and an affluent district (hereafter referred to as ‘Suburban UK’). This choice of terminology ‘urban’ and ‘suburban’ merely reflects the geographic location of the schools in the neighbourhood; ‘central’ and ‘periphery’.

The French sample was selected on the recommendation of local school advisors in such a way to match the British populations of Internet users in terms of location, size, academic results and absenteeism. However, it is important to take note one of the key differences in the secondary education system in Britain and France. The choice of French schools was restricted by the national system of college (11-15 years old) and lycée (16-18 years old) and thus the
French sample consists of 4 educational establishments grouped to make 2 populations, hereafter referred to as ‘Urban France’ and ‘Suburban France’. These schools offered an ideal location for undertaking a survey of Internet user behaviour among teenagers. The French schools also asked to remain nameless and for the surveys to be anonymous.

**Findings**
The survey consisted of 10 purposely-broad questions with sub-questions; 200 copies were distributed to each school in November 2009, in other words 400 copies for the urban setting and 400 copies for the suburban setting. After 4 weeks, this yielded a sample of 585 completed surveys (see appendices B) which were analysed using Sphinx (transcripts available upon request). Illegible and incomplete surveys were discarded.

The survey data indicated that using the Internet does not equate with equal use of sites and services. In other words, although all the teenage respondents used the Internet, they did not use it for the same activities. Overall, the data showed that there was a relatively high degree of similarity in the results obtained from the French sample and the British sample, suggesting that there is convergence in Internet use. However, there was some evidence of disparity in the responses from each school which suggests that certain differences may in fact exist between urban and suburban Internet users.

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The selection of graphs (in appendices C) shows that the respondents in each location can be described as heavy Internet users for a number of activities, such as communicating, retrieving information, social networking, buying and selling. Indeed, respondents in both countries showed clear signs of using similar sites and services, and this would indicate considerable convergence among the 2 national groups. Graphs 1a and 1b show signs that urban Internet usage in the UK closely resembles suburban usage in France; and suburban Internet use in the UK strongly resembles urban usage in France, particularly for information retrieval and social networking - and to a lesser extent, buying and selling online. However, there are signs of divergence; in the sample, UK respondents did not cite the use of translation sites and French respondents did not claim to use BBC sites.

Graphs 2a & 2b illustrate the different ways in which the Internet has changed the way educational activities are pursued. UK respondents overwhelmingly claimed that the Internet had made school-work easier and that it was better for learning. The use of research sites (i.e. scholastic resources such as online encyclopaedias and databases) was highest among suburban UK respondents (36%) and lowest among UK urban respondents (14%). French respondents claimed that the Internet did not change the way they worked at school (43% urban & 38% suburban) but then stated that they use the Internet to do homework (25% urban & 20% suburban). Online translation services were cited by 14% urban respondents and 16% suburban respondents in France, but this service was not cited by UK respondents.

These observations support the notion that learning styles vary considerably between urban and suburban respondents. It is likely that these differences can partly be explained by the national curriculum imposed in each country - but it can also be explained by differences in the pedagogical approach and the role of the teacher. In France, there is more rote learning, memorisation and teacher presence, whereas in Britain the teacher appears to be perceived as a mentor (or facilitator) who imparts the knowledge and skills needed for independent study. Another possible explanation could be the difference in the catchment area of each school. In this study, the urban (inner city) context in the UK can be linked to under-performance; and it closely resembles the suburban context found in France. In other words, the under-performing school was situated in an urban area in the UK but on the city limits in France. This is the main finding of the study.

The pupils in both national settings were heavy Internet users for recreational activities (chat, social networks, communicating and so on) - see graphs 3a & 3b. And yet, many respondents in France (41% urban & 30% suburban) and Britain (20% urban & 16% suburban) claimed that the Internet had not changed their social lives. This is perhaps because they are too young to remember life before the Internet.

Convergence was also noticed in the type of sites that pupils avoided using; firstly, adult sites (58% French urban, 44% French suburban, 43% UK suburban, 18% UK urban) and, secondly, sites with viruses (27% UK urban, 14% suburban).

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26 Internet-based sites and services for over 18s
UK suburban, 9% French urban, 7% French suburban). However, a large proportion of UK respondents (31% urban & 17% suburban) claimed that they had no aversion to any sites. French respondents had a greater aversion to buying & selling online (21% suburban & 8% urban).

At the time of the survey, there was widespread media coverage in France of the dangers of using “unsecure” sites that can be associated with paedophilia and other illegal activities such as online fraud. This may have dissuaded certain French respondents from consulting adult sites and e-tailing sites. In contrast, teachers at the British schools spoke of their continued efforts to inform pupils about the dangers of sites that can contain viruses. It is likely that these two phenomena had an impact upon the survey responses.

The findings of the survey confirm the popularity of Facebook over MySpace and other SNS; this observation supports the work of Ducourtieux and Girard (2009) which shows that users are attracted to the numerous applications that Facebook offers. However, it challenges the studies discussed earlier that claim disparity in the use of SNS and IM based on socio-spatial indicators.

Although the Internet is levelling the playing field in terms of exposure to content, the survey findings suggest that engaging in scholastic/educational activities online remains somewhat unequally distributed by social background in both France and Britain. Attempts are being made to reduce this urban-suburban disparity - for example, regeneration programmes have been designed to encourage digital inclusion and social integration through ICT provision.

Taken as a whole, the survey data showed few major differences in Internet usage, either between urban and suburban Internet users, or between French and British pupils. This observation confirms the growing body of literature that points to converging Internet use. In other words, the survey shows strong convergence in the many sites and services used by urban and suburban respondents in France and Britain, with some minor differences concerning the use of the Internet in an educational context (and this can be partly explained by differences in the national curriculum).

Conclusions & implications

The analysis of the data provides a complete picture as possible of teenage Internet user behaviour, highlighting the extent to which national differences are not apparent in Internet use. In other words, the findings of the study cannot be explained using cultural frameworks. The findings do however back up the emerging patterns in British urban and suburban areas, as outlined in the Oxford Internet Survey (Oxford Internet Institute, 2007) - notably the growing reliance on information seeking, and the popularity of social networking and entertainment activities. This trend raises the problem facing today’s young surfers of knowing how to use the vast amount of information available online; for furthering understanding or simply for enjoying themselves. There is so much evidence to suggest the latter option that a new word has been coined: cyber-hedonism (Economist, 2009b).

This study, albeit on a small-scale, seems to indicate that there is less of an urban-suburban differential in the way teenagers have adopted Internet sites and services than previously thought. There are in fact strong signs of convergence. French and British teenagers demonstrated a growing reliance on information seeking on the Internet, and the rising popularity of online social networking and entertainment activities. The data therefore support the growing body of literature that has identified converging Internet use across national borders.

The findings do not however support the hypothesis of urban-suburban disparity, with reference to communicating and recreational use - although there is evidence to suggest that there is urban-suburban disparity in the use of the Internet for educational purposes. It can also be said that the use of the Internet does not appear to emulate offline inequalities. This disparity does not detract from the main finding: that there is converging Internet user behaviour (intra-group and inter-group) which cannot be explained by existing literature.

Owing to the dynamic speed of change in Internet technology and user behaviour, we conclude that there is a pressing need for ongoing research. Further studies are required to produce a framework that provides greater insight into socio-spatial inequalities and teenage Internet use in an international context, given that the digital natives of today will in a few years be entering the workforce, and secondly that relatively little has been published about this generation (who rely so heavily on Internet-based services) and the implications of their online habits.
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Oxford Internet Institute (2007) Oxford Internet Survey (online) UK. Available at: www.oi.ox.ac.uk/microsites/oisis/publications.cfm (Accessed 03 January 09)
Appendices A

XYZ High School – Year 9/10/11 Internet survey

Name (optional): ......................................................................................................................
Please indicate whether you are: Male / female     Age: .........................

This survey concerns how YOU use the Internet. Please remember that there is no right answer and no wrong answer. The important thing is to write what YOU think. All answers will be confidential.

<table>
<thead>
<tr>
<th>Question</th>
<th>Your answers to the questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. This question concerns your first experience with computers and the Internet.</strong></td>
<td></td>
</tr>
<tr>
<td>a. What year did you first use a computer?</td>
<td>1a.</td>
</tr>
<tr>
<td>b. When did you first buy a computer?</td>
<td>1b.</td>
</tr>
<tr>
<td>c. When did you first use the Internet?</td>
<td>1c.</td>
</tr>
<tr>
<td>d. When did you first get Internet at home?</td>
<td>1d.</td>
</tr>
<tr>
<td><strong>2. This question concerns your motivation for learning how to use a computer.</strong></td>
<td></td>
</tr>
<tr>
<td>a. In what way did you use it first of all?</td>
<td>2a.</td>
</tr>
<tr>
<td>b. Did the computer match your expectations or were you disappointed?</td>
<td>2b.</td>
</tr>
<tr>
<td>c. If you were disappointed, what were the problems?</td>
<td>2c.</td>
</tr>
<tr>
<td>i. Technical difficulty?</td>
<td></td>
</tr>
<tr>
<td>ii. Language/ jargon?</td>
<td></td>
</tr>
<tr>
<td><strong>3. This question concerns your motivation for learning how to use the Internet.</strong></td>
<td></td>
</tr>
<tr>
<td>a. What sites do you use on the Internet?</td>
<td>3a.</td>
</tr>
<tr>
<td>b. Does the Internet match your expectations or does it frustrate you?</td>
<td>3b.</td>
</tr>
<tr>
<td>c. If you are not satisfied with the Internet, what are the problems?</td>
<td>3c.</td>
</tr>
<tr>
<td>i. Are they technical?</td>
<td></td>
</tr>
<tr>
<td>ii. Are they language/ jargon?</td>
<td></td>
</tr>
<tr>
<td><strong>4. This question concerns the aspects you find most useful on the Internet.</strong></td>
<td></td>
</tr>
<tr>
<td>a. Which sites are the most useful?</td>
<td>4a.</td>
</tr>
<tr>
<td>b. Describe the ways in which using the Internet has changed the way you perform everyday tasks in your school work.</td>
<td>4b.</td>
</tr>
</tbody>
</table>
3. Describe the ways in which using the Internet has changed the way you perform everyday tasks in your personal life.

4. This question concerns sites you never use. Which sites do you avoid?
   5a. Why is this? (too difficult to use, not relevant to you, no interest, etc.)

6. This question concerns your opinions. Have your attitudes towards the Internet changed over the last 5-10 years?
   6b. What initial feelings did you have about the Internet? (optimism, fear, curiosity, suspicion, any other reaction …)

7. This question concerns your opinions about the way that the Internet is regulated.
   7a. Do you know who regulates it?
   7b. Are you suspicious about hackers?
   7c. Are you suspicious about the government watching what you do online?
   7d. Are you suspicious about businesses watching what you do online (e.g. cookies)?

8. This question concerns how you use the Internet in your private life (compared to activities that you do face-to-face or by letter). Online, do you use the Internet for:
   a. Buying goods?
   b. Buying services
   c. Paying subscriptions or memberships to clubs/societies?

9. Are there any services you would prefer NOT to use the Internet for? Please give details.

10. What would you change about the Internet if you had the possibility to do so? Please give details.

Any other comments you want to add about the Internet:
Thank you for your time and patience. If you want a copy of the results, please give your email address.
Appendices B - Composition of final sample (585 completed surveys)

<table>
<thead>
<tr>
<th></th>
<th>No. of completed returned surveys</th>
<th>No. of surveys returned blank</th>
<th>No. of incomplete or illegible surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban UK</td>
<td>153</td>
<td>7</td>
<td>42</td>
</tr>
<tr>
<td>Suburban UK</td>
<td>147</td>
<td>53</td>
<td>0</td>
</tr>
<tr>
<td>Urban France</td>
<td>133</td>
<td>0</td>
<td>49</td>
</tr>
<tr>
<td>Suburban France</td>
<td>152</td>
<td>0</td>
<td>56</td>
</tr>
</tbody>
</table>

Appendices C (responses expressed as a % of the total population sampled)

Graph 1a: UK responses (urban & suburban) for most useful aspects of Internet - qu 4a

Graph 1b: French responses (urban & suburban) for most useful aspects of Internet - qu 4a
Graph 2a: UK & French URBAN responses for ‘how has using the Internet changed the way you work at school’ - qu 4b

Graph 2b: UK & French SUBURBAN responses for ‘how has using the Internet changed the way you work at school’ - qu 4b
Graph 3a: French responses (urban & suburban) ‘how has the Internet changed your social life’ - qu 4c

Graph 3b: UK responses (urban & suburban) ‘how has the Internet changed your social life’ - qu 4c
Graph 4a: UK & French URBAN responses for ‘which sites do you avoid using’ - qu 5a

Graph 4b: UK & French SUBURBAN responses for ‘which sites do you avoid using’ - qu 5a
Transcending Cultures in Higher Education: Is a Truly Culturally Inclusive Pedagogy Feasible?

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Abstract: In the past few decades increasing attention has been paid to the roles of culture and cultural backgrounds in education. The educational field is faced with increasingly culturally diverse groups of students with different pedagogical needs. It is obvious that in order to cater to all students’ needs in contemporary, multicultural society, a new approach to education and teaching and learning is needed. INHolland University of Applied Sciences (INHolland), an HEI with some 35,000 students, 40% of which are culturally diverse, is working on transforming its educational programs in such a way that all students, including culturally diverse ones, are truly taken into account. Drawing on many publications INHolland has developed a generic model for inclusive education, in an attempt to find an answer to the question of whether a truly culturally inclusive pedagogy is feasible.

Introduction

In the past few decades increasing attention has been paid to the roles of culture and cultural backgrounds in education. The world is globalizing and communities are becoming a melting pot of many different cultures. The educational field is faced with increasingly culturally diverse groups of students with different pedagogical and didactical needs. As Brown and Jones (2007) and Wlodkowski and Ginsberg (1995) state, Higher Education Institutes across the globe nowadays provide education to students with an enormous range of cultural backgrounds. These are not just students doing parts of their studies abroad, but also students from a diverse range of cultural backgrounds living in a given nation. “Major demographic shifts have led to increasing numbers of culturally, linguistically, and socioeconomically diverse students in our schools” (Brown & Jones, 2007).

Parallel to the increase of students with diverse cultural backgrounds in higher education, we see an increase in articles, publications, questions in online forums and training programs about the effect of this cultural diversity on academic results and ‘problems’ that arise when teaching students of other cultural backgrounds. Many of the research studies have resulted in explanations “locating the problem in the learner, … pointing to disabilities in the learner rather than in the instructional approach” (Hollins, 1996) and labeling the problem as ‘the achievement gap’ (Nieto & Bode, 2008).

The response to these research findings has so far been to create special (diversity) programs within HEIs in order to develop methods to support culturally diverse students to ‘fit’ the system. This has been accomplished by offering additional language courses, training programs to get students familiarized with the dominant assessment and teaching methods, buddy programs with successful people and students from the same ethnic background, etcetera.

However, many authors and researchers contend that the ‘problem’ is not with the students, but with our schools and educational systems (Allen & Boykin, 1992; Au, 1980; Au & Jordan, 1981; Au & Mason, 1981; Banks & McGee Banks, 2007; Bailey & Ewing Monroe, undated; Boykin & Tom, 1985; Branche et al, 2007; Brice-Heath, 1981, 1983; Brown & Joughin, 2007; Carroll & Appleton, 2007; Cortés, 1986; D’Amico, 2001; Erickson & Mohatt, 1982; Gay, 2000; Goodlad, undated; Greenfield and Suzuki, 1998; Hall, 1976, 1981; Hankes, 1996; Hollins, 1996; Brown & Jones, 2007; Lave, 1988; Moll and Whittmore, 1993; Moll et al, 1993-1998; Nieto & Bode, 2008; Rogoff, 1990, 1998; Carroll & Ryan, 2005; Saxe, 1990; Włodkowski & Ginsberg, 1995; Yap, Demmert & Towner, 2003). As Brown and Jones (2007) state, we tend to assume that education is pretty much the same everywhere in the world and forget that each culture has its own rules for learning (Hall, 1976, 1981). “Everyone uses the same attention machinery for more difficult cognitive tasks, but they are raised to use it in different ways and it’s the culture that does the training” (Gabrieli, undated). The ways in which people learn, remember, perform and understand things are inextricably bound to their culture (Wlodkowski & Ginsberg, 1995), including the core attributes of what is considered giftedness (Banks & McGee Banks, 2007).

Schools and educational systems are a product of the dominant culture in the society, leading to the question whose cultural values and practices should guide the schooling process? (Hall, 1976, 1981; Hollins, 1996; Hofstede, 2005; Anonymous, 2005). Special diversity programs like the ones INHolland University of Applied
Sciences has been running for the past few years are ingrained in our own culture. The objectives are sincere: to help culturally diverse students to adapt to our system, but we do this using our own teaching practices. However, as Portes, Cuestas, and Zady (2000) point out: “[w]hat are effective teaching practices in one cultural context may not be necessarily effective in another.”

It is obvious that in order to cater to all students’ needs in contemporary, multicultural society, a new approach to education and teaching and learning is needed (Brown & Jones, 2007; Hollins, 1996). As stated before, education is culturally bound and enhances the culture of the ‘indigenous’ students, which in turn strengthens the existing cultural views of the dominant group and the existing views on education.

INHolland University of Applied Sciences (INHolland) is a Dutch higher education institute delivering professional education to some 35,000 students distributed among five main campuses, 2,500 of these are foreign students, so-called ‘degree seekers’. Overall the student population is about 60% indigenous and 40% culturally diverse, with the balance tipping the other way in the major city campuses in Amsterdam and Rotterdam. Although some special diversity programs have been successful in improving the academic results of culturally diverse students, the effect is not substantial and sustainable enough. In addition, these programs focus solely on the culturally diverse students, basically making them ‘problem students’. Aware of the negative impact of low expectations on academic achievement, motivation, and self-concepts of students (Babad, Inbar & Rosenthal, 1982; Brophy & Good, 1970; Brown & Joughin, 2007; Chow, 1988; Cooper, 1979; Cooper & Good, 1983; Darley & Fazio, 1980; Hofstede & Hofstede, 2005; Jussim, 1986; Rosenthal & Jacobson, 1968), INHolland is now trying to step away from the ‘forced’ acculturation method (Hollins, 1996) and is working on transforming its educational programs in such a way that all students, including culturally diverse ones, are truly taken into account and recognized as “bearers of culture, not bearers of problems” (Carroll & Ryan, 2005). At the same time this transformation should provide students with skills, knowledge, attitudes and tools to function successfully in (professional) life in a multicultural society.

Drawing on many publications, INHolland has developed a generic model for inclusive education, which will be presented in the next section.

INHolland Model for Culturally Inclusive Education

Culturally inclusive education is not just about adding or changing content in the curriculum, it should permeate the entire learning environment in order to be successful (Banks & McGee Banks, 2007; Nieto & Bode, 2008). The same goes for internationalization, for which we developed a tool a few years ago, which defines characteristics of internationalization for each component of the learning environment. Considering the success of this tool in raising awareness among administrators, faculty and staff and the ensuing increased attention and systematic approach to implementing internationalization, we attempted to develop a similar tool for cultural inclusivity. From the substantive amount of literature available on the subject we first deduced the components of a learning environment that should be considered when implementing culturally inclusive education: Strategy, Leadership, Faculty, Students, Program Modalities, Curriculum, Assessment, and Facilities. Drawing on publications of experts in the field, we then defined indicators of cultural inclusivity for each component. These indicators are presented below and play a crucial part in answering the question whether a truly culturally inclusive pedagogy is feasible and if so, how?

The next step in INHolland’s endeavor to provide students with a learning environment in which they all feel at home, is to develop a self-assessment tool for study programs to determine to what extent they are inclusive and which steps they should take to enhance equal opportunities for study success for all students.

Strategy

- The existence of a forthright definition of cultural inclusivity that fits the (future) population of the institution/department/program and that clearly states who it involves.
  - Does the institution include aspects like gender, sexual orientation, disability, ethnicity, age and social status in the term ‘cultural’ or just national culture?
  - And does the institution target all students with cultural inclusivity, or just students with different cultural backgrounds than indigenous students?
- A clear and concise vision and mission regarding cultural inclusivity has been formulated (Hale, 2004), which shows the institution’s/department’s/program’s awareness of considering the entire learning environment.
- The development of policies to increase cultural inclusivity and to decrease discrimination, racial harassment and ‘stonewalling’ throughout the institution/department/program (Hale, 2004).
Activities are undertaken to obtain widespread support for cultural inclusivity throughout the institution/department/program, including involving culturally diverse students and staff in formulating the vision, mission, objectives and activities.

Cultural inclusivity is part of the regular budget of the institution/department/program, hence ensuring sufficient and long-term funding for cultural inclusivity.

Mechanisms to assess cultural inclusivity in all aspects of the learning environment on a regular basis have been developed and implemented.

Culturally diverse representatives of companies, organizations and institutions are invited for and visible during campus events.

Responsibilities and targets regarding cultural inclusivity are defined at all levels of the institution and competent staff members are appointed to take these on.

The institution/department/program has firmly embedded cooperative values in the learning environment, encouraging cross-cultural dialogue and learning experiences (Wlodkowski & Ginsberg, 1995) and collaborative relations of power between students, faculty and management are encouraged (Banks & McGee Banks, 2007).

**Leadership**

- The recruitment and hiring policies and procedures explicitly focus on cultural diversity and cross-cultural experience.
- The institution/department/program has culturally diverse staff in management and coordination positions.
- The cultural diversity in leadership positions reflect the cultural diversity of the student body and the surrounding community.
- Leaders are trained in and expected to show evidence of diversity management in their style of management.
- Staff in leadership positions meet with culturally diverse students and faculty on a regular basis to learn of their interests and concerns (Hale, 2004).
- Managers set aside time to attend multicultural events within the institution and in the surrounding community (Hale, 2004).

**Faculty**

- Serious and appropriate efforts are made to recruit and retain teachers of culturally diverse backgrounds, preferably involving culturally diverse faculty in developing methods and systems (Hale, 2004).
- Teachers have an empathic and sensitive approach and attitude regarding cultural differences (Carroll & Ryan).
- Teachers have specific knowledge about their students’ ways of thinking, believing, learning, and communicating (Wlodkowski & Ginsberg, 1995), and of what is important and meaningful to them (Banks & McGee Banks, 2007).
- Teachers have developed methods to give students meaningful choices about what and how to learn (Wlodkowski & Ginsberg, 1995) and modify their teaching styles to accommodate different learning styles (Banks & McGee Banks, 2007).
- Teachers have an understanding of how things are organized and how people learn in different cultures (Hall, 1976, 1981).
- Teachers refrain from making assumptions about the way in which students learn based on their cultural background or the way they look (Carroll & Ryan, 2005).
- Teachers incorporate the students’ voices in engaging and challenging learning experiences, without his own voice reflecting unilateral authority and universal truth (Wlodkowski & Ginsberg, 1995).
- Teachers select culturally diverse materials, stories, anecdotes etcetera that depict each group as it would depict itself (Banks & McGee Banks, 2007).
- Teachers have a colorful perspective (as opposed to a colorblind perspective) (Banks & McGee Banks, 2007); they are aware that denying culture and cultural differences can be destructive (Hall, 1976).
- Teachers are regularly trained in how to expand and strengthen their courses to reflect a multicultural perspective (Hale, 2004).
- Teachers are trained and coached in recognizing multicultural issues and dealing with them, enabling them to be mentors for culturally diverse students (Hale, 2004).
- Cultural awareness and sensitivity is an explicit part of the recruitment and appraisal of faculty.
Students
- The student body reflects the general population in terms of cultural diversity and ethnicity (Hale, 2004).
- Serious efforts are made to attract students of various cultural backgrounds, using a plethora of recruitment methods that match the styles and beliefs of the targeted groups.
  o How students and their families view their status in schools and society (Banks & McGee Banks, 2007).
  o Counselors, culturally diverse students, alumni and faculty are systematically involved in the recruitment of culturally diverse students (Hale, 2004).
- Culturally diverse students are encouraged to participate in student and campus organizations and to form their own support groups for educational and social interaction (Hale, 2004).
- Culturally diverse students are actively involved in developing the curriculum (Banks & McGee Banks, 2007).

Program Modalities
- The institution/department/program offers an array of flexible modes and procedures of learning and topical choice to accommodate the social identities, cultural interaction styles, profiles of intelligences and unique cultural persona of all students (Wlodkowski & Ginsberg, 1995).
- Pathways of learning, teaching and assessment are rich in context and offered in a variety of ways (Wlodkowski & Ginsberg, 1995).
  o Modes include other forms of intelligence instead of being heavily biased toward verbal facility and the logical-quantitative (Wlodkowski & Ginsberg, 1995; Hall, 1976, 1981).

Curriculum
- The educational / didactic format is such that:
  o Deep understanding is promoted (Wlodkowski & Ginsberg, 1995).
  o Students have opportunities to use concepts and skills in meaningful contexts (Wlodkowski & Ginsberg, 1995).
  o Students are encouraged to use their own words and analogies to solve problems and carry out projects (Wlodkowski & Ginsberg, 1995).
  o Multiple intelligences are addressed (Wlodkowski & Ginsberg, 1995; Gardner, 1991).
  o Students are challenged with authentic open ended problems that are embedded in their own reality, leaving them the opportunity to approach the problem in ways that fit their styles and cultural persona best (Bransford et al, 2000; Banks & McGee Banks, 2007; Wlodkowski & Ginsberg, 1995).
  o Stresses cooperation, interaction and changing one’s conceptions, and encourages a deeper approach to learning and personal transformation (Carroll & Ryan, 2005).
  o A lot is demanded of students in the way of effort, thought, and work (Branche et al, 2007).
  o A variety of pedagogical techniques, curricular assignments, and projects address the learning needs of individual learners (Branche et al, 2007).
  o The focus is on relevant content and avoids frivolous activities (Branche et al, 2007).
  o Students are encouraged to reflect, make connections and derive meaning from their learning experience (Branche et al, 2007).
  o Subject matter is presented in an integrated and thematic manner (Branche et al, 2007).
  o Understanding and competence as well as reorganization of knowledge and skills in unique ways are emphasized (Branche et al, 2007).
  o Differences as well as similarities are emphasized (Banks & McGee Banks, 2007).
  o It supports participation by all students (Branche et al, 2007).
- Teaching is compatible with the norms of behavior and values of the students’ cultures (Wlodkowski & Ginsberg, 1995).
- Instruction and resources are compatible with the variety of capabilities, preferred ways of learning and styles of narration and questioning among students (Wlodkowski & Ginsberg, 1995).
- The curriculum reflects the students’ cultures and perspectives (Banks & McGee Banks, 2007), using their own words and experiences in instruction, resources, and problems constructed and considered (Wlodkowski & Ginsberg, 1995).
- Ample time is reserved in the curriculum for students to discuss group functioning, reflect on it and learn from how they worked together (Wlodkowski & Ginsberg, 1995).
- Differences as well as similarities in behavior, perspectives and styles are emphasized without making culturally diverse students or other points of view and perspectives something exotic (Banks & McGee Banks, 2007).
- Learning objectives are authentic and application-based (Branche et al, 2007).
- Instruction and assessments are aimed at finding the abilities that students do have, rather than pointing out what they aren’t able to do (Banks & McGee Banks, 2007).
- Materials and formats used take a wide variety of backgrounds, profiles of intelligences, entry points, and learning styles into consideration (Wlodkowski & Ginsberg, 1995; Bransford et al, 2000; Branche et al, 2007).
- Alternative perspectives are presented alongside the traditional views, preferably elaborating on the (cultural) origins of these perspectives (Branche et al, 2007).
- Traditional views and assumptions are challenged (Branche et al, 2007).
- An effort is made on a regular basis to examine if and how the curriculum negates some perspectives, views, and groups while favoring others (Banks & McGee Banks, 2007).

Assessment
- There is a well thought out instructional plan of what students should be able to do (Branche et al, 2007).
- Tests are used for diagnostic purposes, pointing out what the student is able to do rather than pointing out his shortcomings (Banks & McGee Banks, 2007).
- Self-assessment is a substantial part of the arsenal of assessment methods, offering students an opportunity to make connections between their actions and learning (Wlodkowski & Ginsberg, 1995).
- Authentic assessment methods like portfolio’s, learning contracts and rubrics, which reduce bias, offer students an opportunity to customize evidence for their learning (Branche et al, 2007).
- Tests and assessments do not put a high linguistic and/or cultural demand on students when the topic being tested doesn’t necessitate it (Banks & McGee Banks, 2007).
- Tests are performance based and include abstract figures and non-verbal content as much as possible (Banks & McGee Banks, 2007).
- When designing tests and interpreting results teachers are aware of the students’ individual heritages, religions, histories of immigration, child-rearing practices, language skills, gender roles, and views regarding authority figures (Banks & McGee Banks, 2007).
- Tests and assessments are designed in such a way that students can provide evidence of their intelligence in a variety of ways (Wlodkowski & Ginsberg, 1995).

Facilities
- Communications directed at students take their ways of using language into consideration (Wlodkowski & Ginsberg, 1995).
- Scheduling (of classes and tests) is done with sensitivity towards culturally diverse backgrounds and religions.
- Opening hours of buildings and facilities (e.g., library and restaurant) allow students to work and use the facilities in accordance with their own rhythm of life.
- Facilities like praying areas are available and decorated with respect for the cultural backgrounds and religions of the students.
- Cafeteria and restaurants offer a variety of foods that cater to a wide array of dietary needs.
- Serious and appropriate efforts are made to recruit and retain non-teaching staff of culturally diverse backgrounds, preferably involving culturally diverse employees in developing methods and systems (Hale, 2004).
- Non-teaching staff are trained and coached in recognizing multicultural issues and dealing with them (Hale, 2004).

Concluding observations
The list of what needs to be considered and done to achieve cultural inclusivity in (higher) education is overwhelming! This probably explains why, in our research for this paper, we haven’t found examples of fully inclusive study programs or learning environments. There are many good examples of culturally inclusive classes and courses — Branche et al (2007) present quite a few —-, but these seem to be small — often isolated — steps. Of course small steps can eventually bring you a long way. However, moving with small steps requires a lot of time,
time which we don’t have in an increasingly multiculturalizing educational environment and daunting drop-out rates.

From the above we can conclude that a truly culturally inclusive pedagogy is theoretically feasible. To move from theory to practice, however, serious commitment is necessary; from administrators, faculty, staff and to some extent also from students.

It is also clear from the list presented above that faculty play a crucial role in achieving cultural inclusivity. Substantive investments will need to be made by the institutions as well as by faculty themselves to acquire the necessary awareness, skills, knowledge and attitudes. Faculty will also need to continuously invest time and energy in getting to know their students and finding ways to appeal to and reach them. Administrators will need to facilitate them with time and space to do so.

Parallel to developing the self-assessment tool ‘Cultural Inclusivity’, INHolland is currently developing training programs for faculty as a second step in the implementation of culturally inclusive education.

INHolland, and presumably many other HEIs, is still a long way from being culturally inclusive, but the list above will allow us to work towards achieving full cultural inclusivity in a systematic, sustainable and comprehensive manner.

References


Diversity in Communities of Learning: The Influence of Hierarchical Position on Individuals’ Activity and Performance

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Abstract: The importance of organizational knowledge in contributing to the competitive advantage of organizations is well documented (e.g. Argote & Ingram, 2000). Moreover, Communities of Learning (CoL) have been suggested as a useful tool for the process of stimulating knowledge creation and diffusion among members of an organization’s workforce. However, despite findings that hierarchical structures are an influencing factor on collaborative learning processes (e.g. Romme, 1996), little is known about how participants’ hierarchical positions influence activity patterns and individual performance within CoLs. The present study finds evidence that the hierarchical position of participants has an impact on their level of activity within CoLs, as well as their performance. By incorporating these findings in the design and implementation of CoLs, coordinators and managers can better anticipate participants’ behavior and device activities that effectively capitalize on the described effects, in order to foster an atmosphere of collaborative knowledge sharing and diffusion.

New Challenges and Opportunities
Numerous researchers have highlighted the importance of organizational knowledge as a pivotal aspect in contributing to the competitive advantage of organizations (e.g. Argote & Ingram, 2000; Nonaka, 1994). In today’s turbulent economic environment, employers and employees constantly need to update their knowledge and skills, in order to face the challenges in front of them (Chalmers & Keown, 2006). Interestingly, although the framework in which organizations and companies are operating is constantly changing, traditional teaching methods continue to dominate organizational training initiatives. This is rather surprising, as only ambiguous results were found on the degree with which newly gained knowledge was effectively transferred into the workplace (Johnson, 2001; Soden & Halliday, 2000). Paired with ever growing time pressure and widely dispersed organizational units, an increasing demand has developed for more innovative training approaches, such as online, collaborative learning (e.g. Armstrong & Sadler-Smith, 2008). Some researchers have suggested a superiority of collaborative learning methods, especially for adult learners, as they incorporate the practical experiences of individual members. By collaborating with each other, participants can create a “hothouse” for new ideas and thoughts (Schlager, Fusco & Schank, 2002), enhancing not only the capacity of the individual employees, but contributing to the knowledge creation of the entire organization. Therefore, collaborative learning has been suggested as a mechanism to produce long-term learning outcomes compared to traditional pedagogies (e.g. Brower, 2003; Harun, 2001; Rehm, 2009; Thomas-Hunt, Odgen & Neale, 2003).

On a more general level, the growing focus on collaborative learning is paired with organizations increasingly relying on working teams to channel individual members’ knowledge into productive organizational outcomes (Thomas-Hunt, et al., 2003). Organizational teams are often constructed of members with very diverse functional, hierarchical, regional, and international backgrounds. And although the potential benefits of these settings are well understood (e.g. Bunderson & Sutcliffe, 2002), research on diversity has provided very mixed results on the impact on team outcomes (e.g. Jehn, Northcraft, & Neale, 1999; Simons, Pelled & Smith, 1999). On the one hand, diverse teams have been found to create an atmosphere where members share their experiences, while acquiring various job-related skills and effectively processing new information (Jehn, Bezrukova, 2004). On the other hand, empirical evidence suggests that members’ diverse backgrounds can create varying degrees of anxiety among team members, thereby inhibiting their cognitive functioning in processing new information (Jehn, 1995). Managers and developers of training programs therefore need to pay specific attention to the underlying mechanisms of interpersonal processes that can influence and have an impact on learning (e.g. Armstrong & Sadler-Smith, 2008; Foldy, Rivard & Buckley, 2009; van den Bossche, Segers & Kirschner, 2006).

In this context, hierarchical structures have been indentified as an influencing factor on such collaborative activities (e.g. Constant, Sproull, & Kiesler, 1996; Krackhardt, 1990; Wellman, 2001). Even more so, some researchers have suggested that hierarchies constitute a major obstacle to collaborative learning processes (e.g. Romme, 1996). However, past research has only provided ambiguous results. While some researchers found that the
use of electronic communication technologies decreased the amount of hierarchical tensions within teams (e.g., Edmondson, Bohmer & Pisano, 2001), others present evidence that hierarchical structures are transferred into the virtual realm, leaving the already established behavioural patterns of the participants unaffected (e.g. Thomas-Hunt, et al., 2003; Owens, Neale, & Sutton, 2000). Then again, evidence provided by Sproull & Kiesler (1986) suggests that hierarchy has no impact on the behaviour of participants, as measured by the level of activity in communication. Consequently, there still remains considerable uncertainty about how learning processes are affected by the social relationships of wider institutional structures (Contu & Willmott, 2003) and how activity patterns in collaborative online communities are sensitive to the functional background, such as hierarchical positions, of community members (Bunderson, 2003b).

The present study will provide valuable insights on how online collaborative learning communities effectively work in an organizational context and what the possible impact of hierarchical positions on such environments is. The main research question is: What is the influence of hierarchical positions on individuals’ activity and performance in Communities of Learning? Based on a global organizational learning program, where participants from different hierarchical levels collaboratively enhanced their knowledge and skills, we will analyse participants’ level of activity and performance, determine possible common patterns and investigate whether hierarchical positions can explain observed behavior and results. This will allow us to make inferences about group settings and dynamics that might stimulate vibrant learning environments, where participants actively engage into knowledge diffusion and creation.

**Communities of Learning and the Influence of Hierarchical Positions**

Numerous researchers have suggested that (virtual) **Communities of Practice** (CoPs) belong to the most important e-Learning methodologies that have been developed in the field of organizational learning in recent years (e.g., Amin & Roberts, 2006). Conceptualized by Lave & Wenger (1991), CoPs constitute “groups of people who share a concern, set of problems or passion about a topic and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (Wenger, McDermott, & Snyder, 2002, p.4). CoPs thereby have the potential to stimulate an effective exchange of practical knowledge between members of an organization’s workforce, connecting different hierarchical levels and contributing to the knowledge creation of the entire organization (e.g., Hakkarainen, Palonen, Paavola, & Lehtinen, 2004; Paavola, Lipponen, & Hakkarainen, 2004; Peltonen & Lammi, 2004).

However, researchers have begun to question the applicability of CoPs for formal, organizational training programs and suggested that the concept needs to be adapted for training in organizations (e.g., Fowler & Mayes, 1999; Nachmias, Mioduser, Oren, & Ram, 2000). As a result, a general shift towards “Communities of Learning” (CoL) (Stacey, Smith & Barty, 2004) has been promoted. CoLs are defined as groups of people “engaging in collaborative learning and reflective practice involved in transformative learning” (Paloff & Pratt, 2003, p. 17). This definition already suggests a more structured setup compared to CoPs. More specifically, in contrast to CoPs, CoLs exhibit clearly defined timelines. Otherwise, participants are prone to lack the necessary drive to actively participate in the exchange of experiences and the creation of new knowledge. Additionally, participation in CoLs is obligatory. While CoPs allow participants to participate if and when they like, CoLs require participants to engage into collaborative activities. Finally, being implemented in a formal, organizational context, all activities within CoLs will automatically be validated and legitimized. This provides an additional degree of structure, which is very important for organizational training initiatives in today’s changing business environment (Chalmers & Keown, 2006; Handzic & Tolhurst, 2002; Rehm, 2009). Given its growing popularity and importance, a considerable amount of research has already identified possible success factors for online communities (e.g., de Laat & Lally, 2003; Stacey, et al., 2004). Yet, current research has either neglected CoLs, and the extend with which findings on CoPs can be translated into this framework, or how activity patterns in collaborative online communities are sensitive to hierarchical positions of community members (Bunderson, 2003b).

Asynchronous discussion forums have been promoted as a valuable tool within both CoP and CoL environments (e.g. de Laat & Vally, 2003; Rehm, 2009; Rienties, Tempelaar, Waterval, Rehm & Gijselaers, 2006; Schellens & Valcke, 2005), as they provide participants with an effective means to communicate with each other irrespective of time and place. In order to determine the level of activity in these forums, numerous measures have been suggested. The present study will follow previous research and define the level of activity as the quantitative contributions within such forums, measured by the amount of individual participant’s threads (e.g. Harasim, 1993; Järvelä & Hääkkinen, 2002; Picciano, 2002; Strijbos, Martens, Prins & Jochems, 2006). Moreover, to gain additional insights on possible behavioural patterns in CoLs, it has been suggested to also consider the length of participants’
contributions (e.g., Gulderb, 2008), as well as the type of contributions they make, focusing either on cognitive processing activities, or more on social and planning behaviour (e.g., Schellens & Valcke, 2005).

Generally, scholars have proposed that participants will take on different roles in the collaborative learning process according to their specific hierarchical position within an organization (e.g., Bird, 1994; Owens et al., 2000). Focusing on the level of participation within teams, Owens et al., (2000) suggest a positive relationship between the hierarchical position of participants and their level of activity. Hence, while members from lower hierarchical positions mainly follow discussions and rarely interject, representatives from higher up in an organization tend to replicate their normal behaviour and also lead virtual teams. This notion is supported by Yates & Orlikowski (1992), who argue that top management will spend more time to proactively set the tone, as they are concerned with loosing control of the virtual team, which could possibly feed through, and even could cause a decrease of power in the real world. Similarly, other researchers have suggested that lower management is subject to a certain “fear of speaking up and making mistakes in the group” (Edmondson, 2002, p. 139), leading them to be more passive in discussions (e.g., Nembhard & Edmondson, 2006). Consequently, building upon previous research and in order to further investigate the relationship between the hierarchical position of participants and their level of activity, our first research hypothesis is

\[ H1 \quad \text{The higher the hierarchical position of an individual participants, the higher their level of activity in a CoL.} \]

In order to make more confound inferences on the impact of hierarchical structures on CoLs, and taking into account the formal character of organizational training initiatives, we extend this analysis to also incorporate measures that test for the performance of the individual participants. In an organizational training framework, this notion has largely been neglected in current research, as participants are assessed individually and their performance usually neither directly depends, nor directly influences the performance of other team members. In contrast, previous studies on the impact of (hierarchical) diversity on the performance of teams have generally considered performance at the organizational level, for example in terms of profitability or sales (e.g., Simons et al., 1990), at the team level (Bunderson, 2003a), or as a mechanism to allocate rewards within a team (e.g., Berger, Ridgeway, Fisek & Norman, 1998). When considering the individual level, Gijselaers, Arts, Boshuizen, & Segers (2006) argued that top and middle management are driven by experience, being able to effectively infer upon new information, while lower management can better recall theoretical knowledge, requiring more time to effectively strike a link between newly gained theoretical knowledge and practical working environments. Similarly, Bunderson (2003b) has stipulated that more senior managers are more used to integrating information from different functional areas. Consequently, when participants’ performance is not only assessed on how well they comprehend new information, but also on how well they can integrate new knowledge in their own environments, our second research hypothesis states that

\[ H2 \quad \text{As the hierarchical position of an individual participant increases, their performance in a CoL will increase as well.} \]

Method

Setting

The aim of the training program in question was to secure the organization’s impact in its daily practice by enhancing the capacity and skills of its staff. The training program was delivered in two years and specifically focused on five pre-defined focal areas, all dealing with different aspects of Economics. The program built on a blended learning approach and was subdivided into an e-Learning and a workshop phase. The e-Learning phase, on which this article will focus, took place entirely online and over a time span of fourteen weeks, with no scheduled real-time meetings. The backbone of this phase was made up of small CoLs, where 10 – 15 randomly assigned participants collaboratively discussed real-life tasks in asynchronous discussion forums. Each focal area had a separate task and discussion forum. Additionally, each CoL had its own “Café-Talk” forum, where participants got to know each other and exchanged private, non-content related information. The participation in the content-related discussion forums was obligatory.

Participants

Overall, 337 participants were randomly assigned to 30 CoLs. The present study analyses a subset of 264 participants (78.34%), due to incomplete datasets of some participants. The 30 CoLs then had an average of 8.80 members (SD = 1.90, range = 6 – 13). The average age was 44.08 (SD = 7.23, range = 29 – 59) and 54 % of the participants were female. The participants’ educational backgrounds included Master’s (70.45 %), PhD’s (14.39 %), Bachelor’s (7.57 %) and other degrees (4.92 %), such as engineering degrees. More specifically, the content domains varied, among others, from Health Sciences and Geography, to International Law and Sociology.
Instruments

Activity Patterns within the Discussion Forums
The activity patterns were determined on the basis of user statistics from the discussion forums. These data provided information on the amount of contributions per participant in the individual discussion forums. On the basis of this data, cumulative scores were produced that indicated the overall level of activity in the different CoLs. Furthermore, information was available on the length of each contribution, measured by the total amount of characters of a single thread. Finally, each discussion thread included a time-stamp, which allowed to investigate how the level of activity might have been subject to fluctuations. More specifically, the duration of the e-Learning Phase was subdivided into 5 equal intervals that lasted about two weeks.

Descriptive Data on Participants’ Professional Background
In order to describe the impact of hierarchical positions on the level of activity, additional descriptive data was collected in the form of a general registration form that participants had to complete prior to the start of the program. The hierarchical position of the participants was subject to the organization’s official job categories. Based on the target group of the training program, three main categories were identified, namely “High”-, “Middle”- and “Low”- level hierarchical positions.

Performance Measures of the Participants
The performance of the individual participants, measured by a final grade, consisted of two component parts. First, participants’ contributions to the discussion forums were evaluated, constituting 50 % of the final grade. Second, the e-Learning Phase was concluded with an open-question type exam that was based on the topics discussed in the forums, and which also constituted 50 % of the final grade. Both grades were determined by academic staff and administered on a scale from 1 (very poor) to 10 (very good). The minimum requirement to successfully pass was 5.5. The academic staff was instructed to award increasing grades when participants were not only able to replicate the new knowledge, but also able to integrate and evaluate it in their own frameworks.

Data analysis
Implementing Kolmogorov-Smirnov tests revealed that the parametric assumption of normality of the data’s distribution was violated for all measured variables. Consequently, non-parametric tests were used to examine the research hypotheses. More specifically, correlations were determined with the Spearman’s rho measure (rₜ). To substitute for ANOVA tests, the Kruskal-Wallis method (H) was used. Whether potential differences exhibited a linear trend was determined via Jonckheere-Terpstra tests (J-T). Finally, to determine possible patterns underlying the Kruskall-Wallis test results, a range of post hoc Mann-Whitney (U) tests were employed. A Bonferroni correction took into account the larger number of investigated groups, with the critical value for significance (.05) being divided by the number of tests conducted (3).

Results
Figure 1 provides a graphical depiction of the observed activity patterns. At first glance, there appears to be a positive relationship between participants’ hierarchical position and their level of activity. This observation is strengthened by the correlation coefficient (rₜ = .180, p = .003). Interestingly, this relationship is clearly driven by the amount of contributions in the content-related forums (rₜ = .183, p = .003). Quite contrary, there is no significant difference between the levels of activity in the “Café-Talk” forums (rₜ = .045, p = .468).

Comparing the differences in activity between the groups provide further evidence that the hierarchical position of a participant has had a significant impact on their general level of activity (H(2) = 8.517, p = .015). Similarly, to the correlation analysis, this difference can rather be attributed to the activity in the content-related forums (H(2) = 9.060, p = .011), than the one in the “Café-Talk” forums (H(2) = 1.683, p = .431). Furthermore, a Jonckheere-Terpstra test validated the indicated positive relationship between hierarchical position and the level of activity (J-T = 13,506.50 , z = 2.937, p = .003). Following up on these findings, the results show that the difference in contributions is especially pronounced between “Low” and “High” (U = 2465.00, p = .002). In contrast, the comparison of “Low” and “Middle” (U = 3915.00, p = .122), and “Middle” and “High” (U = 3173.50, p = .109), both yielded insignificant results. In order to provide a more refined picture of the activity pattern, we also looked at the total and average length of contributions. The correlation coefficients for overall statement length (rₜ = .226, p < .001) and average statement length (rₜ = .155, p = .012) are both highly significant. Likewise, the applicable results of the Kruskal-Wallis tests are also significant for the overall (H(2) = 14.030, p = .001) and average statement length
(H(2) = 6.739, p = .034). Finally, we were interested in the dynamics of the activity pattern and investigated whether and how the level of activity might have changed over time. As can be seen from Figure 2, while at the beginning (Interval 1) of the CoLs all participants were very similar in terms of contributions, the “High” group really accelerated thereafter. Interestingly, the gap then closes again towards the end of the CoLs. Overall, and taking into account these findings, we accept our first hypothesis (H1) that the higher the hierarchical position of a participant, the higher their level of activity will be within a CoL.

![Figure 1](image1.png)

**Figure 1.** Average Contributions per Hierarchical Position in the different Types of Discussion Forums.

![Figure 2](image2.png)

**Figure 2.** Average Contributions to the Discussion Forums per Hierarchical Position over Time.

The second research hypothesis (H2) focused on the impact of hierarchical positions on participants’ performance. Using a similar approach as for hypothesis one, we first determined the correlation coefficients for the relationship between hierarchy and participation grade (r = .115, p = .063), final exam grade (r = .186, p = .002) and final grade (r = .207, p = .001), which all indicate a positive and largely significant relationship. In determining whether the differences in the scores are significant, another set of Kruskal-Wallis test yielded significant results for the final grade (H(2) = 14.170, p = .001), as well as the final exam (H(2) = 11.357, p = .003). The difference in the participation grade, however, was not significant (H(2) = .071, p = .131). In order to determine the component parts of the main effect, another range of Mann-Whitney tests was conducted. When comparing “Low” with “Middle”, only the difference in final exam scores was significant (U = 3366.00, p = .002). Contrasting “Middle” and “High”
yielded significant results for the difference in final grades (U = 2665.00, p = .002). Finally, comparing “Low” and “High”, revealed again the greatest differences, with significant test scores for all grades, namely participation grade (U = 2757.00, p = .057), final exam (U = 2516.00, p = .006) and final grade (U = 2292.00, p = .001). Based on these findings, we tentatively accept our second research hypothesis (H2) that as the hierarchical position of an individual participant increases, their performance in a CoL increase as well.

Discussion
The present study set out to identify the impact of participants’ hierarchical positions on their level of activity and performance in CoLs. We find evidence for a positive relationship between the hierarchical position of participants and their level of activity within CoLs (H1). Whereas participants from higher ranks in the organization were more likely to actively contribute to their CoLs in terms of quantitative contributions, participants from lower ranks in the organization were more likely to be what could be described as “followers”. This provides support for the considerations and findings of researchers like Yates & Orlikowski (1992), who argue that top management will proactively set the tone in communication, and Edmondson (2002), who suggested that participants holding lower hierarchical positions will behave more passively in discussions. Additionally, our results indicate that participants from the “High” group also posted more extensive contributions. This is a very interesting finding, as it somewhat questions the applicability of the often mentioned claim that top management is too busy to contribute to discussions (Owens, et al., 2000). If these findings are taken into account for future CoLs, it would be possible to specifically target participants and either to stimulate them to engage their colleagues into discussions, if they belong to the “High” group, or provide targeted support to them, if they belong to the “Low” group. We also find evidence that participants’ performance is influenced by their hierarchical position (H2). Interestingly, there is a lot of variance in how this translates into actual differences between the different hierarchical groups. Whereas, “Low” and “High” significantly differ in all measures of performance, the other group comparisons yielded significant results for different types of grades.

Taken together, our study provides supportive evidence for the potential benefits of diversity in CoLs. By creating communities of participants from different hierarchical positions, it really is possible to create a “hothouse” for new ideas and thoughts (Schlager, Fusco & Schank, 2002), where participants can access and actively exchange experience from different parts of the organization. By incorporating these findings in the design and implementation of CoLs in other organizational frameworks, coordinators and managers can better anticipate participants’ behaviors and device activities that aim at effectively capitalizing on the described effects, in order to foster an atmosphere of collaborative knowledge sharing and diffusion.

Limitations and Future Research
The current study exhibits two main shortcomings that should be taken into account when interpreting the data and drawing conclusions from the presented findings. First, this research has solely focused on descriptive statistics. Although this approach is widely accepted to provide valuable and exploratory input to more elaborate discussions (e.g., Strijbos, Martens, Prins, & Jochems, 2006), it can only scratch the surface of the underlying social and cognitive relationships. Second, the current study has looked at the activity patterns within the CoLs focusing on hierarchical positions as the only possible explanatory factor that can explain differences in levels of activity among participants. Future studies should also employ a general cluster analysis, in order to either determine other possible factors influencing differences in activity levels, or support the current focus on participants’ hierarchical positions.

Taking into account these limitations, future research should therefore employ a multimethod approach to analyze CoLs activity patterns. More specifically, by employing Social Network Analysis (e.g. de Laat, Lally, Lipponen, & Simons, 2007), it would be possible to identify how participants are connected with each other (“one-way” vs. “reciprocal”), whether their background characteristics can help to predict social network positions, and how these relationships might change over time. This in turn would provide valuable insights about the nature of CoLs and whether they are organic entities, with everyone being connected and thereby having a chance to access the knowledge and experiences of others, or whether they are scatter plots, with its members mainly indulging in monologues that are not considered by their colleagues. In addition, Content Analysis studies (e.g., Schellens & Valcke, 2005) can help to categorize the actual level of learning that has taken place within CoLs, identify the degree of knowledge diffusion between participants and the overall level of higher cognitive knowledge attainment. Moreover, this type of analysis would allow to make more refined comments on the applicability of the claims that top and middle management are better able to effectively infer upon new information, while lower management can better recall theoretical knowledge (Gijsselaers, et al., 2006).
References


Employers put a growing emphasis on inter-personal skills such as “interpersonal communication”, “team-building”, and cognitive skills such as “problem solving”. For example, Douglas Johnson and King (2002) conclude that Human Resource programs are doing an excellent job when focusing on academe’s traditional functional competencies, but they underestimate the importance of developing students’ personal competencies. Similar conclusions were drawn by Giannantonio and Hurley (2002) when they found that the most important issue human resource executives’ face is “management of change.” A review by Hansen (2002) shows that more attention should be paid to the graduate’s ability to combine traditional curriculum contents (academic functional knowledge) and acquired skills in creative ways that add value to their employers. In his view “substantial gaps exist between what employers seek to find, and what students believe they should be getting from these programs, if they are to be adequately prepared for ever more challenging employment opportunities.” (Hansen 2002, p. 536).

Approaches to optimize business education have often been solely driven by demands from the workplace, and limiting itself to optimize instructional design to learning outcomes. In this approach “Content is King”, meaning that business schools focus their curriculum efforts on selection of contents to ensure that student learn contents needed for business practice. However, business schools deliver graduates who are ‘ready to practice’ and not ‘practicing business experts’. Continuous learning and development are essential competencies for graduates to become experts in their field.

The present paper examines what generic competencies contribute to graduates’ professional development to become experts in the field. Many organizations invest in formalized training programs and coaching. However, a majority of what people learn is tacit and is learned informally on-the-job from the people with whom they work (Tannenbaum, Beard, McNall, & Salas, 2010). Given this social nature of learning in the workplace, the ways in which professionals actively form and use their interpersonal relations and social interactions has become an increasing focus in the literature (Grant & Ashford, 2008; Hakkarainen, Palonen, Paavola, & Lehtinen, 2004). In this respect, it is shown that one of the key components of informal learning processes in the workplace is feedback (Tannenbaum et al., 2010). Feedback is one of the most crucial factors in any learning process (Kuchinke, 2000, Salas & Rosen, 2010). Of particular interest is the process by which feedback is generated during informal, face-to-face interactions in the workplace. The central thesis in this paper is that an employees’ own feedback seeking behavior is an important generic competence in their learning and development.

In this paper we will discuss the outcomes of two recent studies. In our first study, we focused on how learning in the workplace is shaped through feedback seeking strategies. We examined the influence of the perceived learning climate on feedback-seeking behavior, and whether feedback seeking leads to increased perceived career development. We collected data within a wide range of domains, covering employees and professionals who work for large organizations. Our second study, conducted in the expert field of Finance and Control, gave us more insight in the underlying social processes of feedback exchanges and the influence on the performance and career development of professionals. We took a social network perspective, meaning that respondents were asked to rate several network questions for all persons in their work-related social network.

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The major findings of our first study indicate that the learning climate of our respondents’ workplace is positively related to the feedback quality they received of their colleagues and supervisors, but does not affect the frequency of their feedback-seeking behavior. The findings show that the perception of a positive learning climate positively influences the feedback quality of the supervisors, which in turn leads to higher perceived career development. This underlines the importance of a positive learning climate, and the significant role of supervisors. This result is in line with previous research of Callister, Kramer and Turban (1999) in which they state that supervisors are ‘a critical element in feedback’.

The findings of our second study indicate that the quality of the relationships within the work-related social network is an important factor in feedback exchanges. We found a positive relation between feedback seeking behavior and performance. The average frequency by which the respondents turned to their contacts for feedback was not related to a higher performance. This shows that the more frequent the feedback is not always the better, as Ashford and
Northcraft (1992) and our first study suggested. Furthermore, the perceived quality of the feedback influenced performance positively. This underlines the suggested importance of the quality of the generated feedback for performance. There were no relations found between the feedback exchanges and career development. Additionally, we found that the size of the work-related network was not related to performance, but did relate positively to perceived career development. This implies that a larger network is good for a person’s career, but does not influence performance. Our findings also suggest that a smaller network is more beneficial for obtaining feedback. These outcomes relate to some extent to the findings of Cross and Thomas (2008). They found that high performers invest in the strength of relationships and do not necessarily have big networks. Overall, both studies highlight the importance of feedback exchanges in the workplace and put forward implications for practice. Organizations should create a work environment in which feedback seeking is encouraged and should recognize the value of feedback to support performance and professional development. Supervisors should be aware of the value of their feedback and the cues they give. Moreover, investing in the strength of relationships in the workplace seems worthwhile. Organizations should particularly invest in the quality of feedback and develop training strategies that incorporate the importance of creating a work environment in which feedback exchanges are encouraged. Being aware of the value of the work-related network and being able to manage feedback exchanges within this network also implies an important goal for any business curriculum as this provides important tools for lifelong learning.
Accompaniment in a validation of the assets of experiment process based on competences in France: new stakes and coaching contributions

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Abstract: In this paper, we take a look at guidance and counselling provided in French Business Schools during the process of accreditation of prior and experiential learning (APEL) based on competences-oriented frames of competences. We set out but describing the specific nature of the guidance and counselling within the French APEL framework and the role of the guidance counsellor. Then, based on qualitative research carried out on a sample of APEL guidance counsellors, we focus on three characteristics of the guidance provided in Business Schools, i.e. a characteristic tied to the nature of the required exercise, the impact of a competences-oriented and competences-based approach, and its similarity to certain coaching stances. We then analyse the central role played by self-examination in the APEL process, as well as the similarities and differences between guidance and counselling and guidance and counselling stances in APEL and coaching processes.

Introduction
In France, law n° 2002-73 of 17 January 2002 and its implementing decrees, also known as the “law on social modernisation”, provides for the possibility of obtaining a full diploma or course units through a process of accreditation of prior and experiential learning (APEL) or validation des acquis d’expérience (VAE). This law amended the education and labour codes, and reshaped practices in establishments that award diplomas. Any candidate involved in an APEL process must be offered guidance and counselling, which they are free to accept or decline. This guidance and counselling is designed to help the candidate prepare their APEL eligibility application and to defend it before the validation panel. Over the course of the last eight years or so since the APEL system was set up, a new player has emerged in the field of education: the APEL guidance counsellor.

Based on analysis of the literature in this field, we have highlighted the need to carry out a more in-depth study of the nature and specificities of this guidance and counselling role. While initial studies and analyses (Ben Moussi-Le Gall, 2008; Vial & Mencacci, 2004) have focused on the context of French Higher Education (especially University education) and the characteristics of APEL guidance at this level, there is visibly no research into the implementation of Business School APEL processes that are competences-oriented, rather than knowledge-based. Our research set out with a two-fold objective: to identify and analyse the nature of the APEL guidance and counselling delivered in Business Schools, and to pinpoint the competences that are essential to a competences-based APEL guidance process.

Literature review
APEL guidance and counselling: definitions and approaches
Since 2002, a new function and a new role have progressively emerged in the French training sector: APEL guidance counsellor. This role, created by the 2002 law on social modernisation and its implementing decrees, has progressively developed and taken shape as the APEL system has been trialled and developed. Although in higher education, guidance for students during initial or further training has always been provided by teaching staff (supervision of work placements, dissertations and theses, tutoring), APEL guidance and counselling has attracted particular attention. Since 2002, many specialists, particularly in the education sector, have identified the specific nature of APEL guidance and counselling and the need to focus more closely on the role of the APEL guidance counsellor, the scope of his action, the specific characteristics of this activity, the requisite competences and the allied difficulties (Mayen, 2004; Orly, 2004; Vial, 2004; Lainé, 2005, Pinte, 2008, Ben Moussi-Le Gall, 2008).
Mayen (2004) identifies two areas of action underpinning the guidance and counselling role: (1) first of all, get candidates to give their expectations of the guidance process, the value they ascribe to their experience, then get them to describe their experience (career path, duties and responsibilities, competences employed); (2) explain and negotiate the “guidance contract” in tandem with the candidate.

Lainé (2004) identified four main stages in the process of partnership APEL guidance and counselling: contact between the candidates and the guidance counsellor(s), retracing the candidates’ career paths, interviews during which the candidates’ activity focuses are described and analysed, and writing up the application files, during which the counsellor theoretically takes a back seat.

Besides defining the different stages and phases of the guidance and counselling process, how can this organically-emerging work-in-progress be defined?

APEL guidance and counselling can, in its initial stages, be regarded as a form of assistance. Here we are referring to support given to the candidate to help them shortlist and classify their professional experience (Pinte, 2008), or “to enable the candidates to detach themselves from the obvious and reflect upon what they do and know” (Henry, 2008, p. 59). In the same vein, Nkeng and Ancel (2008, p. 39) define APEL guidance and counselling as “assistance given to the candidate by a guidance counsellor to help them rebuild a picture of their professional experience, express their experiential learning and formalise it”. The notion of “support” is also present and should be expressed as such in order to alleviate the candidate’s doubts, difficulties and mental blocks without slipping into the role of psychotherapist (Lainé, 2004).

The most important aspect of guidance counselling, as indicated by feedback from the field, lies in the way in the candidate is helped to cognize and express their ideas.

This underlines the important role the counsellor plays as a mediator, an essential link between the experience and the experiential learning in order to deliver a result and raise awareness, which are mechanisms at the heart of the APEL process. The APEL guidance counsellor positions himself as a “consultant” figure who is there to induce the candidate to engage in the process; he does not direct operations, does not teach, and does not act as an expert (Enriquez, 2003).

Pinte (2008) introduces the term “mediation” as a means of helping to raise the candidate’s awareness, and identify and take ownership of their own experiential learning. Nkeng and Ancel (2008) put forward the notion of guidance as a “catalyst”. The actions of the guidance counsellor in this role are not taken account of in the result, but do contribute significantly to the final outcome. The guidance counsellor can also be presented as an assessor “figure” (Vial, 2004). According to Saint-Arnaud (2001), the APEL counsellor positions himself as an educator acting as an assessor whose aim is to elicit reflexive analysis from the candidates. His role, deployed through questioning, is to compel the candidate to engage in a process which he alone holds the keys to (Meyer, 1986), with a view to throwing light on the issues at hand, rather than solving problems.

**APEL guidance and counselling in higher education**

APEL guidance counselling in higher education is a highly complex position, as the role that has to be played in order to ensure that the candidate gets to the panel stage is multi-faceted. Clearly, in these terms, the role is neither simple, nor easily accessible. According to Vial and Mencacci (2004), APEL at university hinges on two critical preconditions.

The first is that APEL at university level really needs to make provision for a “mediator” or pedagogical guidance counsellor who positions himself at the interface between candidate and director of studies for the diploma targeted.

The second precondition – a decisive one in theory - relates to the need for the guidance counsellor to receive specific training. As well as possessing the competences of an adult trainer or a psychologist, it would appear to be essential for a guidance counsellor working in a university to be able to distinguish between informal experiential knowledge and academic knowledge. The counsellor needs to be able to conduct an interview, be comfortably able to get the relevant director of studies to specify the frames of reference for the diploma in question, without losing sight of the limits of the tool. He must have knowledge of the APEL assessment model, as well as of the specificities of the process and the potential expectations of the validation panel.
Research focus and methodology

An issue focus grounded in higher education

The focus of the research presented in this article stems from two central observations relating to the APEL guidance and counselling process in the higher education sector.

Tutors often appear to have been “appointed” to the role of APEL guidance counsellor. It would seem that their experience of guidance and counselling in other areas predisposes them as potentially “good” APEL guidance counsellors. Vial and Mencacci (2004) argue that this guidance role is in some respects (assessment role) very close to that provided by dissertation or thesis supervisors and would not therefore require university staff to acquire new competencies.

However, we have identified a situation which is specific to APEL guidance counselling or APEL counselling training in Business School-type higher education establishments that use a competences-based APEL approach and frames of competences. APEL guidance and counselling does not share the same tenor, the same role or the same objectives, nor does it entail the same hands-on experience as the kind of guidance and counselling that teaching staff have traditionally been used to giving (supervision of dissertations, vocational or academic theses, overseeing work placements), whether in the short-, medium- or long-term.

This situation, which appears contradictory, led us to propose two research focuses that form the backbone of the issues we address.

1st proposal: APEL guidance and counselling in general, and more specifically within the framework of a competences benchmark approach to APEL, is a process that is different from well-established guidance and counselling processes (dissertations, theses, etc), which teachers in higher education are familiar with.

2nd proposal: APEL guidance and counselling within a competence approach in higher education requires that teachers, in order to successfully complete the process, are able to position themselves, adopt new attitudes and acquire new competences that are similar in some respects to those used in coaching.

The aim of this research is thus two-fold: (i) to identify any possible distinctive feature of guidance and counselling provided during a competences-oriented APEL procedure, ii) to pinpoint any competences that actors involved in the guidance process may need to develop.

Research methodology and context

To tackle this focus, we opted for a qualitative research strategy. In order to collect the data, we used a semi-structured interview questionnaire focussing on five areas: (1) perception of APEL guidance and counselling, (2) specific characteristics of APEL guidance and counselling, (3) competences used by the guidance counsellor, (4) assessment of the nature of the service provided (assistance, evaluation, catalyst, eye-opener), (5) recommendations. The sample comprised 15 APEL guidance counsellors who had all been involved in APEL guidance and counselling on at least two occasions in the higher education sector in a Business School setting.

This research was conducted in France in 2009 in a Business School-type higher education institution specialising in management (study area number 34, ISCE19972). The diplomas awarded by this institution are classified under levels 5 and 6 of ISCE 19973. It should be noted that the higher education sector in France comprises two types of institution: university establishments and Grandes Ecoles which mainly provide teaching in the fields of engineering (Ecoles d’ingénieurs) and management (Ecoles de commerce, also referred to as ‘Business Schools’).
Research results
An analysis of the interview highlighted two main points:

- It would appear that the specific nature of APEL guidance and counselling compared to other guidance and counselling on offer in higher education, and more specifically in Business Schools, is a critical factor, due precisely to the very fact that the activity is different in nature.
- The ties to coaching voiced to describe some of the competences needed for this type of guidance and counselling.

Different processes requiring different guidance and counselling competences
In higher education, there are two types of activities tied to guidance and counselling that are available to students in parallel to course teaching and on which reports are written. They are designed to validate learning in a professional environment (the work placement journal and the related work placement report) or to validate a student’s ability to analyse a situation framing a specific topic (dissertation). In all instances, interviewees assert that the nature of the focus of the analysis and the analysis required differ in a number of ways – and significantly – from that found in an APEL process. Consequently, the candidate, too, must adopt a different stance, which will clearly impact on the guidance and counselling provided.

The characteristics of a dissertation appear to be those most far removed from the characteristics of an APEL report. The aim of a dissertation is to assess the student’s ability to express themselves on a specific topic: knowledge is conveyed first and foremost through a reasoned analysis. Past experience (of the candidate or other people) serves to illustrate the dissertation rather than form an essential part of it. In this context, the guidance counsellor is required to approve the topic chosen by the student, ensure that the essential knowledge required to broach the topic is mobilised, that the examples used are relevant and that the “conventions” in terms of presentation, method, syntax and references are observed.

Work placement supervision and the allied work placement report are regarded as being more akin to the exercise that APEL candidates are engaged in. The similarity lies in the focus of the analysis: experience, which can vary in length from case to case. It is the exercise of a professional activity that leads to a report being written – but that is where the similarity ends.

Beyond that, each type of analysis entails a very different stance:

- The aim of the work placement report is to examine the experience in the light of the knowledge imparted during the course modules, and in many cases to take one specific point on which to build an analysis (which often has a particular focus)
- The aim of the APEL report is for the candidate to be able to prove they possess certain knowledge or competences as a result of their experiential learning, the different posts they may have held, and the different missions they may have carried out over the course of their career.

These distinctions between the APEL process and other types of activities for which reports have to be written in Business Schools refer back to the link between guidance and counselling and the triangle of factors - requested deliverable, standard benchmark for the evaluation, stance the candidate needs to adopt. Given the specific nature not just of the APEL process but also the competences-oriented benchmark, the candidate’s stance is essentially atypical.

- taking career path and life path – and to some extent personality – as the focus of analysis.
- developing an ability to analyse one’s own work practices,
- allying this with a critical mindset so as to project experiential learning into the future,
- expressing this analysis of personal experiential learning and formalising it in writing,
- and developing the right level of confidence in oneself, one’s experience and one’s experiential learning.

The stance needed to successfully complete the APEL process highlights the distinct nature of the guidance and counselling required. As regards the work placement report, the guidance counsellor must first and foremost help the student to examine his experience in order to be able to choose an aspect that is relevant to the knowledge acquired.
during his training. This also entails methodological aspects, but the students have often encountered these – albeit less comprehensively and as part of a less in-depth analysis – during the various formative and informative evaluation processes that litter the course modules. The guidance counsellor, however, is usually a specialist in this field and therefore very familiar with the knowledge most required during the work placement.

In the APEL process, guidance and counselling entails helping the candidate become conversant with the standard benchmark they need to satisfy, to surface and articulate their work practices and to provide them with the methods and instruments needed to successfully get through such a specific process. How can the candidate be coached into take a step back and get the self-perspective to pinpoint and prove his own experiential learning? This is the crux of APEL guidance and counselling in terms of the issues at stake and its specificity compared to the traditional guidance provided in higher education establishments or Business Schools. APEL guidance and counselling varies depending on whether the benchmark standard relates to competences or to knowledge.

**APEL guidance and counselling repeatedly likened to coaching**

The results of the research show that the term “coaching” is often instinctively referred to when talking about the competences counsellor use to successfully complete their missions.

To illustrate this notion, the counsellors who were interviewed refer to:

- the absence of a direct training role, in the sense that there is no material associated with a branch of learning to be passed on to the candidate (concepts, analytical methods and tools, theory...),
- a process that is centered on the candidate’s experience,
- a process in which the counsellor must ask questions and get the candidate to ask himself questions so that he discovers for himself the competences he has acquired from his experience,
- a questioning process designed to lead the candidate into adopting a stance that will enable self-analysis and self-examination,
- a process that implies that the candidate is able to discover himself and assert himself as an individual that has the requisite competences “required” by the competences framework.

These assertions lead us to reflect upon possible similarities between coaching and guidance and counselling in a competences-oriented APEL process used in higher education management schools.

**Analysis and discussion**

The results of the research show that APEL guidance and counselling is regarded as being different from the guidance and counselling practices employed in higher education, including in Business Schools, but also that the competences required are quite distinct.

This prompts us to return to the approaches to APEL guidance and counselling set out in existing literature:

- In order to underscore the specific nature of the APEL process, which entails self-examination and self-analysis, particularly when it centres on a competences-based benchmark for management diplomas in the higher education sector,
- And to thus highlight the fact that the core competences required for APEL guidance and counselling resemble those needed for coaching.

**A key part of the APEL candidate’s input involves self-examination**

Dictionary definitions of self-examination focus on “when one’s conscience takes itself as the object of analysis (without any aim of acquiring speculative knowledge)”. One of the main difficulties encountered by candidates – and which the APEL guidance counsellor must find solutions for – stems from the fact that the candidate has to analyse himself. Although the literature highlights how the candidate has to pore over his own past, translate his experience into experiential learning, and tackle a task that, although apparently straightforward, is actually deceptively sophisticated.
Two papers provide particularly relevant insight on this point: Lainé (2004), and Nkeng & Ancel (2008). Both point to four stages, although they are not identical.

Excluding stages 1 (1. Establishing a contract) and 4 (4. Writing) presented by Lainé (2004), both pieces of research feature two core stages: the stage during which the candidate goes back over his career and the stage during which the candidate’s activities are described and analysed. These stages epitomise the self-examination process. The stages put forward by Nkeng & Ancel (2008) should also, in our opinion, be noted: they form a separate stage prior to self-examination (whether or not it is split into two, which in our analysis depends above all on whether the benchmark standard is knowledge-based or competences-based). While referring back to the presentation in Nkeng & Ancel (2008), we spend less time on the transition from the factual to the conceptual (clearly marked by the context of higher education and theoretical knowledge) for this third stage than prespecting the activity, including ist generic dimension, which is partially conceptual, and therefore its contextual dimension and its transferability (Ansart & Sanséau, 2008; Ansart & Sanséau, 2010, Sanséau & Ansart, 2009).

**Guidance and counselling practices sharing overlap with coaching**

Given that self-examination is a stance that a person receiving coaching is invited to adopt, how far do APEL guidance and counselling and coaching overlap? The similarities relate mainly to the process and the stances of each protagonist (guidance counsellor and counsellee). There are varying degrees of differentiation as regards the objective and the focus of analysis.

The main similarities can be seen in the stances of the protagonists, the type of process they engage in and the relationships they forge.

In both the APEL process and coaching, the guidance counsellor is neither trainer, consultant, psychologist nor psychoanalyst: his aim is not to pass on knowledge, nor to give advice or engage the candidate in any sort of therapy. He is first and foremost an eye-opener, a catalyst, a facilitator, and from time to time a trainer. He also has knowledge, or even experience, of the company because he is giving guidance and counselling to an individual in a professional context (even though, as Delivré (2004) states in his coaching categories breakdown, it is possible to focus on an issue typically associated with an individual with a view to improving his performance within the company).

The guidance counsellor possesses the method, the counsellee the material. In order for the counsellee to achieve his aim, he must take the initiative to engage in this type of process, rather than be coerced into it. The counsellee, however, is always the main actor in terms of production; he is responsible for the process, and is even its creator as regards APEL. The process implemented jointly by the counsellor and the counsellee is a co-production or a co-contruction for both coaching (Rogers, 1941, 1952, 1957) and APEL (Mayen, 2004, also uses the term co-activity). This co-production entails guiding the candidate and providing varying degrees of direction (in theory, more under the APEL process than for coaching) in order to help them engage in the process of taking responsibility for himself and exploring the channels of action that will enable him to achieve his goals. This guiding process is based on questioning, transfers and counter-transfers. The role played by questioning, which is well established in the field of coaching, is also prevalent in APEL guidance and counselling: the explicitation interview (Mayen, 2004, Nkeng & Ancel, 2008), descriptive analysis of the activity (Lainé, 2004), analysis of action, self-analysis of one’s work (Olry, 2004).

The characteristics of the process and the stances of the protagonists are therefore very similar in both APEL and coaching. In other respects, there are differences of varying degrees. These differences lie in the objectives and the focus of the processes.

The APEL candidate has a clear objective: to produce a document which proves prior and experiential learning with a view to obtaining a diploma. The objective of the person receiving coaching is not unique and universal. It may not even have been clearly defined by him, or may even change during the process. There are in fact several definitions to coaching, which differ above all in terms of the objectives sought and the methods used. However, coaching can be defined as a method that can be used in various contexts, especially professional settings, with the aim of improving effectiveness and interpersonal relationships and providing help to adjust to change (this is justification for the importance that is ascribed to the diagnostic stage of the coaching process). Coaching is usually regarded as a process which is designed to lead a person or a team to develop an awareness of their main modes of
functioning, with the aim of progressing beyond the situation which this person or team is in (Angel & Amar, 2009, Délivré, 2004). Therefore, not only is the objective not identical, but the focus of the guidance and counselling is not the same either: as regards APEL guidance and counselling, the focus is the candidate’s past experience, whereas with coaching the focus is the individual himself. Another important distinction is that the APEL process is measured against a benchmark standard, which is not the case with coaching. Thus, the APEL process does carry a certain amount of objectivity.

Conclusion

In this paper we have taken a look at the components of APEL guidance and counselling that are crucial when it comes to supporting the candidate in the process of acquiring self-knowledge and recognition. We refer to the importance of the “mediator”, “catalyst” and “eye-opener” role played by counsellors and highlighted in other research. This research, however, has not attempted a closer examination of these roles, which are crucial for the APEL candidate if he is to really discover himself and reconstruct his experience. Given the complexity of this key component of guidance and counselling and within the framework of current attempts to professionalise APEL counselling, suggestions need to be put forward on possible competences to target for development. Given the many similarities between APEL guidance and counselling and coaching practices, it would be a good idea to draw on these practices in order to pinpoint these competences.

Endnotes

(1) “Guidance and counselling is methodological assistance given to an APEL candidate to help him compile the application that he will submit to the certification body, prepare for the panel interview and, sometimes, for simulated professional situations. It is an optional measure which offers the candidate additional opportunities to complete the process”. Source: http://www.APEL.gouv.fr/_pdf/CHARTE_ACOMPAGNEMENT_APEL_GROUPE.PDF
(2) ISCE: International Standard Classification of Education.
(3) Equivalent to level M in the European BMD Reform (Bachelor’s Degree, Master’s Degree, Doctoral Degree).
(4) Since Business Schools in France focus more on practical knowledge than theoretical knowledge compared to universities, they need to possess guidance and counselling resources that are more tailored to experiential learning.

References


Abstract: This article evaluates a postsecondary remediation program in mathematics, aiming to ease the transition from high school to college and to improve the success rates in the first year of bachelor studies. The remediation program consists of voluntary bridging education in the format of an online summer course. We investigate five cohorts of in total 4500 students with 578 participants of remedial education of Maastricht University. Effect analysis suggests a strong treatment effect of successful participation in the summer course. However, given the quasi-experimental setup of this study, with non-equivalent groups, selection effects may exist. Therefore, the treatment effect is corrected by applying the propensity score method, taking into consideration a wide range of student background factors. The results indicate that indeed a selection effect is present, but that after correction, still a substantial treatment effect remains, of about 50% the effect size of advanced prior math education.

Introduction
This article focuses on a type of education that is referred to in different ways: bridging education, developmental education, or generally: remedial education, directed to ease the transition from high school to college and to improve the success rates in the first year of bachelor studies. In the Netherlands, the main advising council for educational affairs, the Educational Council of the Netherlands, has stressed the importance of bridging education in a range of studies and advices (Onderwijsraad, 2006, 2007, 2008). The dating of these advices makes evident that Dutch interest in bridging education is recent. Nation wide projects, supported by SURF, the Dutch collaborative organisation for innovations in ICT in higher education, run from 2004 onwards. Some of these Dutch initiatives have acted as pioneers for European projects, indicating that interest in (continental) Europe is also of recent date. EU projects M.A.S.T.E.R. and S.T.E.P. collect experiences with bridging education with a specific European focus: that of internationalisation of European higher education (Rienties et al., submitted). This internationalisation development is going fast; e.g., for some Dutch universities located at short distance of country borders, like the case elaborated in this article, the share of international students in bachelor studies has risen to 70%. Secondary school systems, even in neighbouring countries as Netherlands, Germany and Belgium, are very different, producing strong heterogeneity in knowledge and skills of prospective students. That heterogeneity brings about a strong need for bridging education in the transfer from secondary to university education, which adds to the more national focused needs for bridging education that exist for already some more time: to bridge knowledge and skills deficiencies in areas that are part of the national secondary school programs, but are not sufficiently mastered by students transferring to university.

The longest tradition of bridging education is to be found in the Anglo-Saxon educational settings and specifically in the US. Developmental education for underprepared students, as it is generally labelled, is often state-wise organized, and has achieved an enormous reach: not less than 52% of first year students of public colleges in the US take developmental education in any format. Recent discussions in the US on the topic of developmental education focus on the question if there is any way back: the opinion that too large a share of public funding of education finds its way to developmental education is shared by many, opening the debate how to improve regular education to diminish the need for developmental education (see e.g. the special edition of New Directions for Community Colleges, 2008). No surprise therefore that by far the most empirical studies into the effect of bridging education refer to the US context: Bahr (2008), Bettinger and Long (2008), Jamelske (2009). The specific US context of these studies determines the way the research question of the impact of bridging education is approached: entrance to US higher education is based on selection, and part of most selection procedures is that prospective students participate in a placement or entry test and, in case they score less than a certain cut-off point, are required to take developmental education. In such a typical US context, impact studies compare the academic success of students scoring just below the cut-off score (who are obliged to participate in bridging education) with that of
students who score just above the cut-off score (and who are excluded from bridging education), using so-called regression-discontinuity models.

In the European context, such an approach cannot be taken: generally, no selection takes place upon entering university education, so the option is missing to oblige some, and to exclude other, students from bridging education (Brants & Struyven, 2009; Rienties et al., submitted). However, from a methodological point of view both contexts share important characteristics: in the investigation of the impact of bridging education, one cannot use an experimental design in either context, since participation in bridging education does not take place on the basis of randomized assignment, but on the basis of the outcome of a placement test (US), or self-selection (Europe). Direct comparison of academic success of participants and non-participants of bridging education is therefore not a proper way to find a treatment effect, since the composition of the two groups of prospective students will, in general, be different. The relevant research design is that of the quasi-experiment with non-equivalent groups, that requires a correction of the differences observed between experimental and control groups on the basis of differences in background statistics of students in both groups. In the US based empirical studies, it is one single background factor, the score on the placement test, that distinguishes the students in the treatment group from students in the control group, and so allows the use of regression discontinuity methods. The typical European case lacks such a discontinuity, and directs the investigator to methods recently developed for the quasi-experimental setup with non-equivalent groups: propensity score based correction methods (Fraas, 2007; Guo & Fraser, 2010; Shadish, Cook, & Campbell, 2002; Yanovitzky, Zanutto, & Hornik, 2005), that correct the treatment effect for differences in background characteristics between treated and non-treated subjects.

The effect analysis presented in this contribution makes use of experiences achieved in the bridging courses mathematics for prospective bachelor students of the Maastricht University School of Business and Economics. These courses are designed as voluntary summer courses that take place in the summer before the start of the regular bachelor program. In the European context, it is one of the longest lasting cycles of bridging education: from summer 2003 on, these summer courses are offered without major changes, and in seven consecutive runs, 750 prospective students have participated. The bridging courses focus on international students, entering the bachelor study with a non-Dutch prior education, and indeed 90% of the participants is of international background. The propensity score analysis performed in this study profits from the availability of a unique data set of students’ background characteristics, collected in the framework of long term investigations into first year study success. Data on students’ learning approaches, metacognitive abilities, goal orientations, motivational profiles with regard to intrinsic and extrinsic motivation, and subject attitudes based on the expectancy-value framework constitute a broad range of learning related students’ factors that are natural candidates for the correction for selection effects. Against a US background of cumulating evidence that developmental education is expensive, but doubtful in its effects, the central question of this article is if an optional summer course is an effective instrument to help international students bridge math deficiencies caused by differences in national secondary school systems?

**Methods**

**The adaptive e-tutorial ALEKS**

The characteristics of students flowing into the programs of business and economics, combined with the outcomes of the entry assessments to be discussed in more detail in the next section, have been conclusive with regard to major design choices of the bridging education, including the preference for a summer school format. Some of the major considerations at play were:

- The large differences in prior math mastery require a bridging course of considerable size: up to a workload of approximately 100 hours for students with the most basic forms of prior math schooling.
- For a bridging course of this size and the strong heterogeneity of students, adaptivity is crucial. Each student should be able to enter the course at the appropriate level.
- To achieve adaptivity, (repeated) diagnostic testing is crucial, and the ability to adapt learning materials to the outcomes of these individual, diagnostic tests.
- The size of the bridging course, and the large variation in work load for students depending on their prior mastery, prevents offering such a bridging course ‘in the gate’ (that is: intra-curricular, during the first few weeks of the regular program), but forces it to be offered ‘before the gate’ (that is: extra-curricular, during the summer that precedes the start of the regular program).
- Since participants of the bridging courses are (in large majority) international students, the bridging course cannot offered on site, but should be offered according the model of distance e-learning.
- Since the period in which the summer course is offered is also occupied by holidays, jobs, and practical work, the format of the summer course should be very flexible: the summer course should be available over
a relative long period (June, July, August), with a maximum of freedom for students to schedule their individual learning around other activities in that summer.

Based on all these grounds, it was decided to organize the bridging course around an existing adaptive, electronic tutorial: ALEKS College Algebra module. The ALEKS system, in full Assessment and Learning in Knowledge Spaces, is an intelligent tutoring system based on principles of knowledge space theory, a branch of artificial intelligence (Doignon & Falmagne, 1999; Falmagne, Cosyn, Doignon, & Thiéry, 2006). The system combines adaptive, diagnostic testing with an electronic learning and practice tutorial in mathematics and several other domains relevant for higher education. First pillar of ALEKS is the description of all such domains by a hierarchic knowledge structure that specifies the interdependencies between the individual items spanning the domain. This knowledge structure indicates what knowledge states are feasible, and what are inconsistent. All these feasible knowledge states together constitute the knowledge space. Second pillar of the system is the adaptive assessment engine that provides in an efficient way a probabilistic estimate of the knowledge state of any individual student. Based on that assessment, the system offers material that the student is best able to learn at a given time. In fact, the student can choose from two types of tasks: those belonging to the outer fringe, and those belonging to the inner fringe of the student’s knowledge state. The outer fringe consists of new activities, not practiced before, for which the student masters all prerequisite items (new items ready to learn). The inner fringe consists of items the student has practiced before, but for which the mastery level is estimated as less than complete (items suggested for review).

The ALEKS assessment module starts with an entry assessment in order to evaluate a student's knowledge state. Following this assessment, ALEKS delivers a graphic report analyzing the student's knowledge within all topic areas for the course. All problems of the assessment module are algorithmically generated, and require that the student produce authentic input (see Figure 1, left panel for a sample assessment item). The assessment is adaptive: the choice of each new question is based on the aggregate of responses to all previous questions. The learning report, of which the right panel of Figure 1 shows a part, provides a detailed, graphic representation of the student's knowledge state by means of pie-charts divided into slices, each of which corresponds to an area of the syllabus. In the ALEKS system, the student’s progress is shown by the proportion of the slice that is filled in by solid colour. Also, as the mouse is held over a given slice, a list is displayed of items within that area that the student is currently ‘ready to learn’, as determined by the assessment.

Figure 1. Sample of ALEKS assessment item and Partial sample of ALEKS learning report.

Participants and non-participants
This study is based on the investigation of five cohorts of first year students in the programs business and economics; these are all of the seven cohorts for whom full data is available on both the summer course, and relevant students’ background characteristics needed for the statistical investigation. In total, these five cohorts contain about 4500 first year students, amongst them 68% of international students. Of these students, 578, or 13%, decide to participate in the voluntary math summer course. A necessary condition for being accepted in the summer course is an expression of the willingness to invest at least 80 hours of study efforts, a time investment on average required by students with math prior education on basic level to cover the full module. However, that promise appears to be difficult to keep: only 52% of all participants manage to study at least 55% of the topics part of the
electronic learning tool. This required 55% coverage is a mild one, since it includes topics already mastered at the start of the summer course. Students achieving this milestone will be indicated as the successful participants, or the students passing the summer course, the other students being the non-successful or summer course failing ones. Because of the characteristics of the e-tool, success is strongly dependent on time investment, what is also clear from a comparison of measured time investment: total connect time in the e-tutorial of students passing the summer course is on average 52.1 hours, whereas average connect time of students failing the summer course, that is, not achieving the 55% coverage requirement for passing, is only 15.1 hours. Tool connect time is a conservative estimate of total study efforts: it measures how much students study within the tool, but misses study time outside the tool.

After finishing the summer course, the regular bachelor program starts with two eight-week (half semester) integrated, problem-based learning designed courses, each having a 50% study load. The first course is an introduction into organizational theory and marketing, the other course, called Quantitative Methods I or QM1, an introduction into mathematics and statistics. That second course is of special interest for this study, since the ultimate aim of the summer course is to optimally prepare students for this QM1 course. The very first activity in the QM1 course is to administer an entry test, for several reasons: for longitudinally monitoring the math mastery of prospective students, to provide individual students with diagnostic feedback, and to collect data relevant for the design of both the summer course, and the QM1 course. The coverage of the QM1 course mirrors the circumstance that strong heterogeneity in math mastery, due to students educated in different national systems and at different math levels, necessitates a fair amount of repetition. Most topics covered repeat topics educated in the grades 11 and 12 of Dutch secondary schooling, basic math level (the last two years of high school), with some time devoted to new topics. There is no overlap between QM1 and the content of the summer course, since that content is covering topics of grades 7-10 of secondary schooling. Effect analysis in this study will focus on student achievements in this QM1 course of both participants, and non-participants in the summer course. However, outcomes of our study are rather robust with regard to the specific choice of effect variable, due to institutional regulations in Dutch higher education. E.g., the presence of a so-called system of binding study advice, forcing students with insufficient academic achievements in their first year to quit the study, makes achieving a pass for QM1 practically a requirement, and in fact the most binding requirement, for achieving a positive binding study advice. Therefore, academic successes in the first year, and that in the QM1 course, do not deviate that much.

The most powerful predictor of academic achievements in QM education is the level of math schooling in high school. In this study, we will distinguish two different levels: basic and advanced. Nearly all European secondary school systems distinguish two levels of pre-university math education; focusing on the three systems most relevant for our study, these levels are A versus B for Dutch secondary education, ‘Grundkurs’ versus ‘Leistungskurs’ for the German speaking high school system, and Math SL versus Math HL for students having an International Baccalaureate (IB) diploma. The binary variable achieved this way is an important predictor of academic achievement. However, it should be realized that it is no more than a very crude classification, given the strong differences between national educational systems. Table 1 contains the decomposition of both participants and non-participants in the math summer course with regard to different types of prior education, and the level of math prior education, of students for whom data on prior education are available. With regard to nationality, two different groups are distinguished: Dutch versus International. Students with an IB diploma are regarded as being part of the last group, but can be of any nationality; this implies that International refers to the type of prior education, rather than nationality.

Table 1: Composition of five cohorts of first year students with regard to prior education.

<table>
<thead>
<tr>
<th>Summer course participation</th>
<th>Dutch-prior education</th>
<th>International prior education</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>math basic</td>
<td>math advanced</td>
<td>math basic</td>
</tr>
<tr>
<td>Participant</td>
<td>44 ( 4.3%)</td>
<td>10 ( 2.7%)</td>
<td>394 (18.2%)</td>
</tr>
<tr>
<td>Non-participant</td>
<td>971 (95.7%)</td>
<td>403 (97.3%)</td>
<td>1769 (81.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>1015</td>
<td>413</td>
<td>2163</td>
</tr>
</tbody>
</table>

In agreement with the main goal of the bridging course, participation is much stronger amongst international students, than amongst Dutch students, and much stronger amongst students educated at basic level, than amongst students educated at advanced level. Still, there are relatively many summer course participants amongst the international students with advanced math prior education. Main explanation is the tradition in German speaking countries to halt study in between high school and university for one or several years, either forced by military
Statistical analyses
An important focus of this contribution is the methodology of the effect analysis. Since participation in the summer course is on a voluntary basis, a quasi-experimental setup for the effect analysis is required. Besides, the design contains a post-test, but no pre-test, so that it is best characterized as a quasi-experimental design with non-equivalent groups and post-test only (Shadish et al., 2002). Such a design embodies the risk of self-selection. In line with recent advices with regard to finding causal effects in observational studies (see the AERA 'think tank white paper': Schneider, Carnoy, Kilpatrick, Schmidt, & Shavelson, 2007), a broad range of students’ background factors that may be related to potential self-selection effects is included to offset the limitations of a quasi-experimental research design.

Traditional approaches for effect analysis in observational studies determine the treatment effect with a multiple (logistic) regression model or ANCOVA containing as predictor variables, beyond the treatment, also covariates that correct the effect for variation that is not caused by the treatment variable (but is e.g. the outcome of a selection effect). This approach has its limitations, especially when experimental and control group strongly deviate with regard to these background characteristics (Fraas, 2007; Yanovitzky et al., 2005). Therefore, the preferred methodological approach corrects the treatment effect for non-equivalent group composition (Fraas, 2007; Guo & Fraser, 2010; Shadish et al., 2002; Yanovitzky et al., 2005). Basis of that correction are the propensity scores: the conditional probabilities that an individual belongs to the experimental group, or to the control group, given a set of covariates (background characteristics). Propensity scores are generally estimated with logistic regression analysis. The correction of the treatment effect can take place in different ways of data balancing: using the propensity scores as matching variables, as stratification variables, or as covariate (Guo & Fraser, 2010). In this study both of these last approaches will be used: given the unequal size of treatment and control groups, stratification or subclassification is regarded as more appropriate than matching.

One background characteristic will not be used in determining the propensity scores, but will be included into the model as a separate factor, together with the propensity score: the level of prior math education. This will allow us to make an explicit comparison of the treatment effect of successfully participating in the summer course, with the effect of being educated at advanced math level in high school.

The covariates: students’ background characteristics
In finding relevant covariates, we profited from long term research into study achievements in the first year of study undertaken in our school. The first set of background factors refer to students’ approaches to learning, and are investigated in the context of the learning patterns model of Vermunt (Entwistle & Peterson, 2004) and the instrument based on that model: ILS or Inventory of Learning Styles. Vermunt distinguishes in his model four domains or components of learning: cognitive processing strategies, metacognitive regulation strategies, learning conceptions or mental models of learning, and learning orientations. Next, students’ goal orientations are measured with an instrument designed by Grant and Dweck (2003), that classifies goal orientations into six types: intrapersonal outcome goals, intrapersonal ability goals, normative outcome goals, normative ability goals, and two different types of learning goals, that differ in the extent the student is longing for challenge: the learning goal (in the strict sense) and the challenge-mastery focused goal orientation. Metacognitive abilities are measured by the AILI instrument (Tempelaar, 2006), that is based on Flavells’ three component model of metacognition, which decomposes metacognition into the components knowledge, skills, and attitudes. The Academic Motivation Scale (AMS; Vallerand et al., 1992), based upon Ryan and Deci’s (2000) model of intrinsic and extrinsic motivation, is applied to achieve motivational profiles of students containing different types of intrinsic, extrinsic, and a-motivation. Lastly, subject achievement motivations based on Eccles’ expectancy-value theory (Eccles & Wigfield, 2002) are measured with an instrument derived from the Survey of Attitudes Toward Statistics (SATS) developed by Schau and co-authors (Tempelaar et al., 2007). The SATS instrument measures six aspects of post-secondary students’ subject attitudes, amongst which two expectancy factors that deal with students’ beliefs about their own ability and perceived task difficulty: Cognitive Competence and Difficulty, and three subjective task-value constructs that encompass students’ feelings toward and attitudes about the value of the subject: Affect, Interest and Value. The sixth aspect, Effort, is assumed to be the outcome of the process of weighting expectancy against value.
**Results**

**Descriptive analyses**

Figure 2 exhibits the non-corrected treatment effects of successful participation in the summer course of students being educated at basic math level versus advanced math level in high school, respectively for the total score in the course, QM1 total score. The effect of prior education at advanced level, compared to basic level, is 4.6 points in the QM1 total score (or expressed as effect size, 0.64 standard deviations). The effect of successful participation in the summer course, with no participation as reference, equals 5.3 points in total score (0.76 standard deviations) for students educated at basic level, and 3.8 points (0.54 standard deviations) for students educated at advanced level. As to be expected, the treatment effect is much larger for students educated at basic math level, than for students educated at advanced math level. For the principal target group of students in the summer course, those with a basic math prior education, the non-corrected effect of successful participation in the summer course is even that large, that they outperform students with an advanced prior education who do not participate the summer course.

**Propensity scores**

The selected instruments of self-perception surveys relevant for learning processes appear to be appropriate resources for potential selection effects. Out of the 42 learning related scales, 30 demonstrate statistically significant differences in means when contrasting summer course participants with non-participants, always in the direction that participants in the summer course achieve on average more favourable scores than non-participants. Only 12 scales do not demonstrate significant differences. Propensity scores or conditional probabilities to participate in the math summer course have been estimated for all 3240 students for which a full data record of background characteristics is available, using binary logistic regression. Since most of these learning characteristics are associated, in the logistic regression determining the propensity scores, only six of the 42 students’ background characteristics appear to be a statistically significant predictor of summer course participation (beyond prior math education). By far the strongest predictor is, in agreement with the design aims of the summer course, the indicator variable distinguishing international students from students with a Dutch prior education. Next, in the order of decreasing impact, the vocational learning orientation, self-perception of cognitive competence (negative), metacognitive knowledge, the constructivist learning conception, and amotivation (negative). The outcomes of the logistic regression, both in terms of statistical significance of predictors and the sign of the regression coefficients, are intuitive: international background, the conception that learning takes place through self-constructon of knowledge, and good metacognitive skills strengthen the probability to participate the summer course, whereas lack of learning motivation, and one’s perception to be already rather competent in the area of quantitative methods, weaken that probability. In agreement to procedures advised in the literature (Fraas, 2007; Shadish e.a., 2002; Yanovitzky e.a, 2005), propensity scores are estimated on the basis of the full model, that is all covariates included, both those being statistically significant and those being non-significant.

**Propensity score as covariate**

After the estimation of propensity scores, the effect analysis is repeated, with the propensity score added as extra predictor, next to the indicator variable of math prior education, and the treatment variable of summer course participation. Table 2 contains the outcomes of the effect analysis performed as a multiple regression of QM1 total score on the predictor variables propensity score and three indicator variables (dummies): math prior education at advanced level, successful participation in the summer course, and non-successful participation in the summer course (this choice of indicator variables implies that math prior education at basic level, and no participation in the summer course, serve as reference groups). Propensity scores and the three indicator variables together explain 11.2% of the variation.
Table 2: Outcomes of effect analysis on QM1 total score with propensity score as covariate.

<table>
<thead>
<tr>
<th></th>
<th>beta</th>
<th>t-value</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propensity score</td>
<td>0.072</td>
<td>4.116</td>
<td>0.000</td>
</tr>
<tr>
<td>Advanced math dummy</td>
<td>0.271</td>
<td>15.978</td>
<td>0.000</td>
</tr>
<tr>
<td>Successful participation summer course dummy</td>
<td>0.154</td>
<td>8.899</td>
<td>0.000</td>
</tr>
<tr>
<td>Non-successful participation summer course dummy</td>
<td>-0.086</td>
<td>-5.002</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Table 2 confirms the picture sketched in the last results section: participants of the summer course stand out from non-participants in terms of background characteristics that have a positive impact on learning. The consequence of this is that in the corrected calculation of the effect of summer course participation, part of explanation of academic success by successful summer course participation is absorbed by the propensity score, as compared to the non-corrected model. The obvious implication of this is that the contribution to explained variation by summer course participation becomes smaller. However, a substantial effect of successful participation in the summer course remains: the beta (standardized regression coefficient) exceeds 50% of the value of the beta of the predictor math at advanced level.

**Propensity score as stratification variable**

The best protection against the impact of potential selection effects in a quasi-experimental research design with non-equivalent groups is offered by applying the method that stratifies all subjects on the basis of the propensity scores (Fraas et al., 2007; Shadish et al., 2002; Yanovitzky et al., 2005). This literature suggests the creation of five strata, based on the quintiles of the distribution of the propensity scores. Each of these five strata this way contains subjects with propensity scores of the same magnitude, so that effect analysis within each stratum is minimally influenced by differences between subjects in their value of the propensity score. We applied this approach, and repeated the multiple regression analysis described in the last section for each of the five strata created by distinguishing the five quintiles of the propensity score. The outcomes of these regression analyses are collected in Table 3.

Stratification appears to achieve exactly where it is intended for: the influence of students’ background characteristics, expressed as propensity score, is statistically insignificant in all five strata, where it had been the strongest predictor before stratification taking place. Other regression outcomes are quite similar to the outcomes achieved in the complete data set, with the first stratum producing slightly deviant outcomes. In that first stratum, the quintile of students with the lowest score for students’ background characteristics that contribute to participation in the summer course, the positive effect of successful participation in the summer course is outshined by the negative effect of failing the summer course. This different position of the first stratum is due to the very low number of participants of the summer course in that stratum, and amongst those participants, the large majority drops out of the summer course (amongst the 660 students in this stratum, there are only 23 participants in the summer course, with 17 who drop out). The other four strata, each containing many more summer course participants and especially many more successful participants, all demonstrate the same patterns as found in the full data set: the largest effect is that of the indicator variable of prior math education at advanced level, with the treatment effect of successful participation in the summer course in the second position, having an effect size of at least 50% of the effect size of advanced math.
### Table 3: Outcomes of effect analysis on QM1 total score with propensity score as stratification variable.

<table>
<thead>
<tr>
<th>Stratum 1: propensity score &lt; 0.055</th>
<th>beta</th>
<th>t-value</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propensity score</td>
<td>0.062</td>
<td>1.715</td>
<td>0.087</td>
</tr>
<tr>
<td>Advanced math dummy</td>
<td>0.365</td>
<td>10.065</td>
<td>0.000</td>
</tr>
<tr>
<td>Successful participation summer course dummy</td>
<td>0.061</td>
<td>1.674</td>
<td>0.095</td>
</tr>
<tr>
<td>Non-successful participation summer course dummy</td>
<td>-0.118</td>
<td>-3.251</td>
<td>0.001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stratum 2: 0.055 &lt; propensity score &lt; 0.117</th>
<th>beta</th>
<th>t-value</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propensity score</td>
<td>0.022</td>
<td>0.563</td>
<td>0.573</td>
</tr>
<tr>
<td>Advanced math dummy</td>
<td>0.310</td>
<td>8.124</td>
<td>0.000</td>
</tr>
<tr>
<td>Successful participation summer course dummy</td>
<td>0.173</td>
<td>4.511</td>
<td>0.000</td>
</tr>
<tr>
<td>Non-successful participation summer course dummy</td>
<td>-0.050</td>
<td>-1.308</td>
<td>0.191</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stratum 3: 0.117 &lt; propensity score &lt; 0.166</th>
<th>beta</th>
<th>t-value</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propensity score</td>
<td>0.008</td>
<td>0.201</td>
<td>0.841</td>
</tr>
<tr>
<td>Advanced math dummy</td>
<td>0.222</td>
<td>5.697</td>
<td>0.000</td>
</tr>
<tr>
<td>Successful participation summer course dummy</td>
<td>0.127</td>
<td>3.257</td>
<td>0.001</td>
</tr>
<tr>
<td>Non-successful participation summer course dummy</td>
<td>-0.090</td>
<td>-2.315</td>
<td>0.021</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stratum 4: 0.166 &lt; propensity score &lt; 0.217</th>
<th>beta</th>
<th>t-value</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propensity score</td>
<td>0.041</td>
<td>1.063</td>
<td>0.288</td>
</tr>
<tr>
<td>Advanced math dummy</td>
<td>0.195</td>
<td>4.990</td>
<td>0.000</td>
</tr>
<tr>
<td>Successful participation summer course dummy</td>
<td>0.146</td>
<td>3.735</td>
<td>0.000</td>
</tr>
<tr>
<td>Non-successful participation summer course dummy</td>
<td>-0.117</td>
<td>-2.996</td>
<td>0.003</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stratum 5: 0.217 &lt; propensity score</th>
<th>beta</th>
<th>t-value</th>
<th>significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propensity score</td>
<td>0.007</td>
<td>0.191</td>
<td>0.849</td>
</tr>
<tr>
<td>Advanced math dummy</td>
<td>0.268</td>
<td>7.071</td>
<td>0.000</td>
</tr>
<tr>
<td>Successful participation summer course dummy</td>
<td>0.210</td>
<td>5.485</td>
<td>0.000</td>
</tr>
<tr>
<td>Non-successful participation summer course dummy</td>
<td>-0.068</td>
<td>-1.769</td>
<td>0.077</td>
</tr>
</tbody>
</table>

### Conclusion and discussions

Effect analysis suggests that bridging education with a broad coverage of topics and flexible content steered by adaptive testing can be very effective: the non-corrected effect of successful participation in our summer course exceeds the effect of math prior schooling at advanced level, with basic schooling as reference. The relevant research design of this study is that of a quasi-experimental setup with non-equivalent groups, requiring a correction of the calculated treatment effect for potential selection effects. Correction on the basis of the propensity score method indicates that indeed part of the non-corrected treatment effect should be attributed to the circumstance that participants in the summer course possess more favourable background characteristics for achieving academic success in their study, than students who choose not to participate. At the same time, after correction for the non-equivalent composition of both groups, a substantial treatment effect remains, in the order of size of about half the effect size of being educated at advanced math level in high school.

The outcomes of the effect analysis suggest that the chosen format for bridging education, to know that of an online summer course with a very broad coverage of basic math topics, and learning controlled by individual, adaptive testing, is a very efficient one to bridge math skills deficiencies. The average study load of being successful in the summer course is much less than the difference in study load between high school math education at advanced, versus basic level. Notwithstanding, the treatment effect of successful summer course participation is about 50% of the effect size of advanced prior math education. The question if such an outcome is unique for the chosen format of bridging education, or that other formats, like offering additional bridging classes parallel to regular education as part of the first year university program -a format used by many Dutch and European bridging initiatives-, is as effective, suggests to be an important research question.

### References


Acknowledgments

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The effect of synchronous communication on the success of virtual teams: a case study.

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Abstract: In recent years, the possibilities of ICT to support synchronous interaction in online learning have increased considerably. Web-videoconference systems offer several tools (like chat, audio, webcam) varying in the extent to which learners can display social and emotional information when collaborating with others. In this study we examined whether the number of videoconferences attended and the use of (a combination of) communication tools during web-videoconferences by 60 students in an online course had an effect on student learning, learning satisfaction and perceived usefulness of the course. Our findings are in line with our expectations that students who attend videoconferences more often tend to be more satisfied about the online course and their own learning than students who did not. The relationship between perceived usefulness and the use of tools with higher degrees of social presence as well as the reasons for non-participation, however, are less clear.

Introduction

The ability to interact with others and express emotion is crucial for collaboration. In online settings this ability is commonly referred to as social presence (Short, Williams & Christie, 1976) which is defined by Garrison, Anderson & Archer (2000) as “the ability of participants […] to project their personal characteristics into the community, thereby presenting themselves to the other participants as real people” (p. 89). Recent research on social presence highlights that not only the type of communication medium, but also self-perception of individuals (Garrison et al., 2000, 2001) can influence how social presence is perceived. Social presence is found to determine learners’ experience and perception of social interaction (Yang, Tsai, Kim, Cho & Laffey, 2006; Rourke & Kanuka, 2009). For example, it has been found that not only the type of communication medium fosters social presence, but also self-perception of individuals (Garrison et al., 2000, 2001) and (group) identity (Rogers & Lea, 2005). In general, it can be said that in effective collaboration the perception of social presence and the influence thereon by the medium of communication are important.

Nowadays, the use of tools for synchronous communication in online learning has become easier due to the current increase in bandwidth and easy to use web-based tools like Skype™ or Adobe Connect™. The question can be raised whether these tools provide indeed more opportunities for participants to express emotion, which in turn affects social presence and collaboration in online settings. Despite the evident need to question this assumption, only few studies exist that provide empirical research on this issue. For example, from discussion forums as collaboration tool it is known that they can only support a low degree of social presence as only text can be transmitted (Tu, 2002; Tu & McIsaac, 2002). On the opposite, web-videoconference conversations have the potential to support a medium to high degree of social presence but don’t necessarily do so (Rogers & Lea, 2005). In general it can be said that although modern technology provides enhanced collaboration tools, it is still questionable whether these tools are utilized in a way that development of social presence is fostered.

It can be hypothesized that the use of web-videoconferences has a positive impact on the (perceived) quality of a course, the achievement of learning goals and tasks. Next, one may expect improved collaboration and user satisfaction as well as higher teacher ratings. After all, Synchronous communication might reduce meaning barriers, the obstruction of mutual construction of meaning of information from sender to receiver, when learners are working and learning together in an online classroom (Bromme, Hesse, & Spada, 2005; Rummel & Spada, 2005). However, to our knowledge nearly no research exists providing evidence for these hypotheses. In general, it is only assumed that providing visual information enhances social presence.

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Method
Setting
The present study took place in an online preparatory course in Economics for prospective bachelor students of an International Business degree program. This course bridges the gap in prior knowledge for prospective bachelor students. Students never met face-to-face prior to the course and could meet during the four weekly web-videoconferences that were offered (one hour each). Further communication took place via asynchronous discussion forums. The planned work load was 10 to 15 hours per week.

Participants
In total, 155 students participated in the preparatory course in 2008 and 2009. Of this total, 60 filled the complete evaluation questionnaire. Their average age was 19 and 40% were female. There were no differences in self-reported ICT expertise and internet connection.

Instruments
Perceived usefulness
An instrument that was developed for online remedial education was used to measure the perceived usefulness of the course. It consists of 33 items on a Likert scale ranging from 1 (= totally disagree) to 5 (= totally agree) divided into eight subscales: course design; course materials; goals and tasks; learning satisfaction; group collaboration; instruction by teacher; assessment and web-videoconference. Cronbach alpha values range between 0.541 and 0.742. The response rate was 77%.

Performance measures
In total, four summative tests were administered during the course. Three weekly tests were used to measure the progress a student made. Every weekly test contained 20 multiple-choice questions about the topics students had to study up to that moment. At the end of the course, a final test containing 20 questions about the entire study material was administered. Performance on these tests was scored on a scale from 0 (lowest) to 10 (highest).

Data analysis
The number of times a student participated in a web-videoconference was used as the independent variable for statistical analyses. Each student got a participation score for each of the four videoconferences. These scores were based on the observed use of tool(s) and consisted of five categories: 0 (no participation); 1 (chat only); 2 (audio and chat); 3 (webcam and chat), and 4 (webcam, audio and chat). From these scores, a total tool-use score was calculated by dividing the sum of the participation scores by the number of times a student participated. Thus, the higher the tool-use score, the more complete set of tools a student used regardless of the number of times s/he participated.

As performance measure the weekly test score and the score on the final exam were used instead of the final grade because the latter is the result of a weighed calculation of the three weekly tests, the score on the final test results plus a graded participation score for the videoconferences and discussion groups and therefore doesn’t give a clear picture of performance. An approach similar to the calculation of the tool-use score was used with respect to the weekly test scores since not all participants completed all three weekly tests. The sum of all separate scores was taken as total score for weekly tests which was then divided by the number of tests a student completed leading to an average weekly test score. The higher the average weekly test score, the better a students’ score on the weekly tests regardless of the number of tests this student completed.

Results
An overview of the use of communication tools as percentage of total participants during the four web-videoconferences is depicted in Figure 1.
At the first web-videoconference, around 70% of the course participants were present. Almost 40% used all communication tools offered in the online classroom; 14% used the audio and chat-functionality 4% used webcam and chat and 13% used only chat. The total number of non-participants increased over time leading to a participation rate of 38% in the final web-videoconference while the use of webcam, audio and chat remained largely stable from the second web-videoconference onward.

The percentage of participants using camera, audio and chat remains more or less stable from the second web-videoconference onward even though the total number of non-participants rises. At this point, it might be arguable that computer skills and/or better internet connections using more tools can explain part of the results. However, a one-way ANOVA analysis of the usage of communication tools based on computer skills and connection did not lead to significant differences, implying that technical expertise and bandwidth-quality did not influence the choice of communication tools.

In order to assess whether frequent attendance of the online classroom led to increased learning satisfaction and learning outcomes, Table 1 depicts the means and standard deviations for the perceived usefulness scores depending on the number of web-videoconferences a student participated in. Means, standard deviations and number of participants for performance measures and tool-use scores are depicted in Table 2.

Table 1. Perceived course usefulness in scales per group.

<table>
<thead>
<tr>
<th>Number of times participated</th>
<th>1 (n=10)</th>
<th>2 (n=19)</th>
<th>3 (n=15)</th>
<th>4 (n=16)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M  SD</td>
<td>M  SD</td>
<td>M  SD</td>
<td>M  SD</td>
</tr>
<tr>
<td>Assessment</td>
<td>12.40  2.76</td>
<td>14.74  2.62</td>
<td>15.47  2.59</td>
<td>16.06  1.44</td>
</tr>
<tr>
<td>Course Material</td>
<td>9.70   1.42</td>
<td>10.26  2.28</td>
<td>10.67  1.88</td>
<td>11.00  1.37</td>
</tr>
<tr>
<td>Course Design</td>
<td>22.65  2.08</td>
<td>23.08  2.63</td>
<td>24.03  2.28</td>
<td>25.16  2.29</td>
</tr>
<tr>
<td>Goals and Tasks</td>
<td>14.70  1.42</td>
<td>15.58  1.30</td>
<td>15.40  1.88</td>
<td>17.13  1.86</td>
</tr>
<tr>
<td>Group Collaboration</td>
<td>18.40  1.58</td>
<td>19.68  2.03</td>
<td>20.53  1.41</td>
<td>21.13  2.45</td>
</tr>
<tr>
<td>Instruction</td>
<td>20.45  2.30</td>
<td>20.92  1.93</td>
<td>20.27  2.91</td>
<td>21.06  2.22</td>
</tr>
<tr>
<td>Learning Satisfaction</td>
<td>18.40  1.58</td>
<td>19.68  2.03</td>
<td>20.53  1.41</td>
<td>21.13  2.45</td>
</tr>
<tr>
<td>Videoconference</td>
<td>16.40  2.07</td>
<td>17.95  2.61</td>
<td>18.27  2.49</td>
<td>17.63  1.96</td>
</tr>
</tbody>
</table>

A one-way ANOVA analysing the effect of the number of times a student participated in a web-videoconference on perceived usefulness scores showed there is a difference between groups on course design (F(3,59) = 3.16; p<.05), with the correlation of number of participated videoconferences and course design score being .37, p<.01, goals and tasks (F(3,59) = 5.41; p<.01 with the correlation of number of participated videoconferences and goals and tasks score being .42, p<.01), learning satisfaction (F(3,59) = 4.51; p<.01 with the correlation of number of participated
videoconferences and learning satisfaction score being .43, p<.01), group collaboration (F(3,59) = 4.86; p<.01 with the correlation of number of participated videoconferences and group collaboration score being .44, p<.01) and assessment (F(3,59) = 5.27; p<.01 with the correlation of number of participated videoconferences and assessment score being .44, p<.01).

Post-hoc tests showed that for course design, learning satisfaction and group collaboration, students who participated in all four web-videoconferences scored significantly higher than students participating once or twice. Further, students who participated in all four web-videoconferences scored significantly higher on goals and tasks than students participating in all other groups. Finally, post hoc tests showed students who only participated once scored significantly lower on assessment than all other groups.

Table 2. Final test scores and tool-use scores per group.

<table>
<thead>
<tr>
<th>Number of times participated</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
<td>n</td>
</tr>
<tr>
<td>Final test score¹</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>5.97</td>
<td>4.04</td>
<td>12</td>
</tr>
<tr>
<td>Average weekly test score²</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>7.23</td>
<td>0.42</td>
<td>13</td>
</tr>
<tr>
<td>Tool-use score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>2.80</td>
<td>1.32</td>
<td>19</td>
</tr>
</tbody>
</table>

¹ Total N=46 since not all students completed the final test
² Total N=47 since not all students completed all weekly tests

A one-way ANOVA analysing the effect of the number of videoconferences participated in on tool-use score showed there is a significant difference between groups (F(3,59) = 2.83; p<.05 with the correlation of number of participated videoconferences and tool-use score being .30, p<.01). Post-hoc tests showed the tool-use score of students participating two times to be significantly lower than of students participating three or four times.

A one-way ANOVA analysing the effect of the number of videoconferences participated in on average weekly test scores showed a significant difference between groups (F(3,43) = 4.63 p<.01 with the correlation of number of participated videoconferences and average weekly test score being .48, p<.01). Post-hoc tests showed the average weekly test score of students who participated in all four videoconferences to be significantly higher than that of students participating once or twice.

A one-way ANOVA analysing the effect of the number of videoconferences participated in on final test score showed no significant differences (F(3,42) = .507 ns).

**Conclusion and discussion**

In this paper, we aimed to examine if the number of videoconferences participated in and the richness of tools that allow students to project their identity (webcam, audio) will lead to a higher success rate, higher perceived usefulness of the course and a higher learning satisfaction than students who participate less often and merely used lean tools like chat.

Our findings indicate students participating more often in the offered videoconferences are more satisfied about the course design, its goals and tasks, group collaboration, assessment, and general learning satisfaction. The small group of students participating in all four videoconferences are more positive than those participating once or twice. On the performance measures (average weekly test score and final test score) a similar picture emerges. Students participating in all four videoconferences tend to score higher, but not higher than students in all other groups. Though no direct and/or causal relationship between tool-use score, learning satisfaction and performance can be derived from these data, the reported results indicate the effect of tool-use score on these may be very small.

The strong decline in participation leads to question the reasons behind a students’ choice to take part or not. Especially since the data seem to indicate that participating in all videoconferences leads to increased satisfaction and higher performance. A reason for non-participation may be that the average results on the weekly tests are rather high in the beginning. Calculative students may choose not to put in the extra effort because of this. In addition, the increase in tool-use score for the group of students who participated in all videoconferences gives rise to the idea that a successful experience may lead a student to come back a next time while (technical) problems may lead to non-participation. Third, perceived usefulness may be an important factor here. A problem is that this was not directly questioned. However, the evaluation of the videoconferences relates to perceived usefulness and showed no significant differences between groups. Fourth, personal characteristics like motivation and learning style may have an influence on a students’ choice to participate or not. Future research should take these into account. That can be done via questionnaires but also through qualitative methods like focus groups.
Since self-reports are a subjective measure (Rourke & Kanuka, 2009), it is interesting to assess the asynchronous communication via content analysis. If the perceived decline also occurs there it may point toward a more common feature of online preparatory courses.

A final issue that is of importance here is that factors other than the tools used (e.g. group dynamics, personality) may be more defining for social presence and the effect on online learning Rogers and Lea (2005). Future research should assess in what way videoconference can be applied in online learning to generate the most beneficial effects for online learning.

References
Paradox of Tradition and Modern Technology: Participatory Research as a Dialogue for Redefining the University-based Researcher’s Role in Indigenous Communities

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Abstract: This paper describes how to utilize participatory research, an alternative qualitative research approach, in crossing borders between the university and indigenous communities and between tradition and modern technology. The paper gives an account of a three-year project funded by Canada’s Social Sciences and Humanities Research Council (SSHRC) to utilize participatory research methods to investigate the development, evolution and educational role of an innovative digital high school that provides an alternative delivery model for high school students in remote and isolated Aboriginal communities in Northern Ontario. The project is a collaborative study between university-based researchers and Aboriginal communities to investigate key aspects of Aboriginal knowledge and culture that communities see as reflecting digital curriculum needs of Aboriginal students, as well as the effective tools that would enhance and extend the delivery of the curriculum. This paper examines how university-based researchers utilized participatory research to build collaboration among community people, parents, students and teachers to create new innovations by encouraging various indigenous cultural ideas and grafting them into technology in a way that pools all talents and resources together and allocates these talents and resources efficiently. The paper concludes that for successful participatory adaptation of modern technology for educational purposes in indigenous societies, community members must become co-decision makers at every stage of the project.

Introduction

University-based research has constantly maintained a distinct identity struggling over appropriate methodologies, research paradigms, and theoretical constructs. Ironically, service to society, particularly indigenous ethnic societies and the analysis of culture have not been explicitly at the centre of the university-based research agenda or explicitly analyzed within the theoretical and methodological debates. Within the university’s traditional culture, there is a cultivated indifference that apparently underlies the objectification of other cultures or sees cultures other than that of the university’s as a ground of social contest, largely unequal in which the university-based researcher gains or retains control over the research process. In other words, university-based research is positivistic, objective, and has the potential to deform the capacity for open dialogue with other cultures. It does not provide a base for mutual reciprocal relations between cultures, particularly those of ethnic groups. The academic view that has increasingly dominated research is that indigenous communities are significant “Others” who dwell in educational “borderlands”. Quinnan (1997) describes significant “Otherness” as “a nameless, faceless attribute forced on disadvantaged groups different from the majority because of race, ethnicity, gender, class, or age” (p. 33). Similarly, hooks (1990), describes the concept of the “Other” as follows:

No need to hear your voice when I talk about you better than you can speak about yourself … only tell me about your pain. I want to know your story. And then I will tell it back to you in a new way. Tell it back to you in a way that it has become mine, my own. Re-writing you, I write myself anew. I am still the author, authority. I am still the coloniser, the speak subject, and you are now the centre of my talk (p. 153).

Speaking to the culture of the university, Giroux (1994) describes it as “a one-dimensional Eurocentric academic canon, the autonomous subject as the sovereign source of truth, and forms of high culture which maintain sexist, racist, homophobic, and class-specific relations of domination” (p. 30). From its birth in twelfth century Italy and France to its colonization of the modern developing world, the university maintains a persistent endurance over time with a stubborn resistance to change in spite of external pressures and internal transformations (Perkin, 1984; Altbach, 1992). By tradition, the university not only celebrates particular kinds of intellectual content, but just as surely certain types of performance in carrying out its missions. The university strives to remain protected from external interference and therefore unwilling to break the cultural mystique and behavioral codes built over time. One of such mystiques is to maintain some form of social differentiation with some parts of society valued or rewarded than others. The degree of such differentiation and its significance for the way research is conducted varies.
dramatically across research populations and within research paradigms. Moreover, there are many different bases or criteria for such differentiation. Among the most common are age, race, ethnicity, regional origin, sex, lineage, and income (Quinnan, 1997). Both across and within research populations and paradigms, there is considerable variation in which one of these, or which set of them, is most powerful as a determinant of how research is conducted. Furthermore, up to the last quarter of the last century, research was based to a substantial extent on the tenets of positivism and an objectification of indigenous “other” cultures in which forms of theory, data, and analysis fail to measure themselves against the needs of indigenous peoples (Creswell, 2008). Set against this backdrop of research culture, it is clear that indigenous societies are accorded a marginal status, that is, in object-like terms. Attempts to replace a qualitative unit by a quantitative variable as the unit of analysis and attempts to base research upon the canons of positivism or natural scientific methodology are to underestimate the role of culture in knowledge generation and subsume culture in a value-free analysis (Welch, 1993). Palmer (2000) argues that the university regards anything practical as ultimately not an embodiment of worthy knowledge and rationality. Palmer offers a critique of how positivism has tended to dominate the idea that the methods of natural sciences can alone guarantee the generation of knowledge and argues that because of the university’s pursuit of theoretical rationality rooted in the empiricist tradition that emphasizes the detachment of the subject from the object as the key role in the progressive unfolding of knowledge, “academic culture holds disconnection as a virtue” (p. 3) and that the university is intellectually committed to an inherent thought that “claims that if you don’t disconnect yourself from the object of study—whether it’s an episode in history, or a body of literature or a phenomenon of the natural world—you knowledge of it will not be valid” (p. 3). Palmer has pointed to the impact of marginalization of certain kinds of knowledge in universities by stating, “For a century and more, we have venerated ‘detached scholarship’ (while disciplines that require close encounters between the knower and the known—art, music, dance, and the like—have been pushed to the bottom of the academic totem pole) (p. 3).”

The point of view that will help to restore some balance to the picture for a renewed confidence between university-based researchers and indigenous communities should be a paradigmatic shift. The main purpose of this paper is to clarify the place of indigenous culture and epistemology within academic research. Concentration upon the general theme of this conference—“Crossing Borders”—enables the place of university-based research to be examined within the context of indigenous communities. Such an examination clarifies what is distinctive about research in indigenous communities, the analysis of which will hopefully hone awareness of the intentions and the effects of the changes that are possible in enhancing relationships between universities and indigenous communities. The paper describes a three-year project funded by Canada’s Social Sciences and Humanities Research Council (SSHRC) to utilize participatory research methods to investigate the development, evolution and educational role of an innovative digital high school that provides an alternative delivery model for high school students in remote and isolated Aboriginal communities in Northern Ontario. The project is a collaborative study between university-based researchers and Aboriginal communities to investigate key aspects of Aboriginal knowledge and culture that communities see as reflecting the curriculum needs of Aboriginal students, as well as the effective digital tools that would enhance and extend the delivery of the curriculum. Working collaboratively with members of the communities that have the Internet high school classrooms, the research team used a participatory research framework to negotiate the research process and its implementation. The study, still ongoing, has documented what Aboriginal people perceive as top community priorities for their children’s high school education, and proposed strategies that would help close the achievement gap between Aboriginal and Canadian mainstream students. This paper looks more closely at the participatory research strategies; the understanding of power relationships; the prospects for collective learning; and the production of knowledge that is linked to action. Social informatics scholars (Kling, 1999, 2000; Star et al., 2003; Bishop et. al, 2003; Van House, 2004) argue that technology and the social are inseparable and mutually constituted and that responsive, well-designed technologies empower users. When digital systems are used in indigenous societies for educational purposes, models need to be negotiated, and their implementation tested against the needs of the local inhabitants. Conventional Eurocentric models that fail to measure themselves against the development needs of the people for whom they are intended may be inadequate. In what follows, I delineate how participatory research can be utilized as a dialogical form of research in indigenous communities.
Participatory Research as a Dialogue

I began this paper by arguing that traditionally, university-based research is positivistic, objective, and has the potential to deform the capacity for open dialogue with other cultures; underestimates the role of culture in knowledge creation, and strictly adheres to positive canons that suppress ‘other’ cultures. In other words, university-based research has resolutely held the idea that positivist methodology alone can guarantee the generation of knowledge in all societies and therefore does not provide a base for mutual reciprocal relations between cultures, particularly those of ethnic groups. Gadamer’s (1986) concept of fusion of horizons renounces the notion of objectivity and absolute answers in favour of an open dialogue in which each party accepts that the understanding of each other as well as understanding oneself is considerably variable. Similarly, in searching for an acceptable as well as legitimate way of dealing with ‘others’ Freire’s (1970) concept of dialogue and problem posing is significant for collaboration between the university-based researcher and indigenous communities. As Freire writes:

Since dialogue is the encounter in which the united reflection and action of the dialoguers are addressed to the world which is to be transformed and humanized, this dialogue cannot be reduced to the act of one person's 'depositing' ideas in another, nor can it become a simple exchange of ideas to be 'consumed' by the discussants (p. 77).

Freire (1970) further argues that "Without dialogue, there is no communication and without communication, there can be no true education" (p. 81). Thus, in the terms of Freire, dialogue encourages critical thinking and action. This study involves the mobilization of community people to pose problems and find solutions to them. The research process should, therefore, be flexible to accommodate all the necessary viewpoints of participants. As Freire writes of problem-posing:

Problem-posing education, as a humanist and liberating praxis, posits as fundamental that men subjected to domination must fight for their emancipation. To that end, it enables teachers and students to become Subjects of the educational process by overcoming authoritarianism and alienating intellectualism; it also enables men to overcome their false perception of reality (p. 74).

Participatory research is an alternative qualitative research paradigm approach to social science and educational research (Creswell, 2008). Participatory research might seem an odd, even awkward or pretentious expression—signifying exactly what? Whatever answers are given to that question, the approach and contexts of participatory research suggest that it is the representation of academic thought that has discarded the “Other” as the object of research (Agbo, 2006). Participatory research is useful in helping dominated, exploited, and minority groups to redefine old problems, propose fresh alternatives and take action in solving the problems (Kemmis, 1991; Participatory Research Network, 1982; Maguire 1987). Therefore, participatory research provides an arena for collective empowerment that helps to deepen knowledge about social problems and helps to formulate possible actions for their solution. Similarly, Creswell (2008) defines participatory research as a social action process that meshes the activities of research, education and action by “incorporating an emancipatory aim of improving and empowering individuals and organizations” (p. 555). According to Park (1993) “Participatory research is emerging as a self-conscious way of empowering people to take effective action toward improving their lives” (p. 1). Torres (2002) also argues that participatory and action research “offer a practical alternative to positivism, and are particularly useful to enhance the degree of participation of the ‘studied’ populations in policy and planning” (p. 378). Thus, in this project, we are not merely describing social reality, but radically trying to change it by combining the creation of knowledge about social reality with actual action in that reality. As an educational process, the project is educating us by engaging in the analysis of structural causes of selected problems through collaborative discussion and interaction (Agbo, 2005). As an action process, the project is enabling the participants to take collaborative action for radical social change in both the short and the long run. The common ethos of the project consists of an emphasis on the voices of First Nations with “insider” cultural experiential knowledge not found in texts to be included in the knowledge production (Agbo, 2002). The most important aspects of participatory research are 1) the origins of the issues, 2) the functions which those concerned with the issues play in the process, 3) the concentration of the strategy in the context of the moment, 4) the understanding of power relationships, 5) the prospect for organizing for collective learning, and 6) the production of knowledge that is linked to action (Hall, 1981; Agbo, 2001, 2006). In what follows, the analysis proceeds with the background and the origin of the issues.

Non-Science in Indigenous Research: Collective Autonomy vs Researcher-Initiated Activities

There has been an articulated notion, collected into one overall integrated idea within academia that the best way to enhance the development of indigenous communities is to do research for the communities, where communities’ cultural traditions are suppressed by the agenda of positivistic, scientific methods. The ideology of
strategic rationality where the slavish imitation of natural sciences overwhelms the cultural authenticity of indigenous communities prevents adequate consideration of who should be the beneficial of research in indigenous communities. However, in contemporary times, collaborative research in indigenous communities finds its strongest justification in recent discussions of consumers of change and technology. Social informatics scholars (Kling, 1999, 2000; Star et al., 2003; Bishop et al., 2003; Van House, 2004) argue that technology and the social are inseparable and mutually constituted: responsive, well-designed technologies empower users. When Aboriginal students use digital systems for educational purposes, however, conventional Eurocentric notions as the basis for educational design may be inadequate. Rather than a one student, or a teacher-student team, maximizing prescribed curriculum in a centrally controlled environment, both technological and curricular designs need to support community determination, flexible cultural interpretations, and adjudication of cultural values across social boundaries. Digital environments hold the promise of richer curricula, enhanced cultural pedagogies, more effective organizational structures, stronger links between schools and community, and the empowerment of disenfranchised learners and groups when programs are negotiated and their implementation tested against the needs and wishes of the local inhabitants (Trotter, 1998; Bishop et al, 2001; Behrmann, 1998). The emphasis on science and scientific ideology virtually always pay little or no attention to questions of cultural differences, or the politics and ethics of cultural interaction.

In many contexts, the intrusive tendencies of university-based researchers and their dominance of the research process in indigenous communities are only evidence of the negative standpoint in the relationship between the university-based researcher and indigenous communities. The recent emphasis on qualitative methods of research will make considerable advance of knowledge if particular attention is paid to the concrete as opposed to purely analytical relations between university researchers and other cultures.

Research Phases

For successful participatory adaptation, community members have to become co-decision makers at every stage of the project. Too often, technological design and evaluation are characterized by features that are detrimental to the education of those outside of the social, Eurocentric mainstream (Warschauer, 2003). The content of this project has three distinct components. In Year 1, we embarked on two phases: 1) Negotiating the research relationship; and 2) Identifying communities’ perspectives, opinions, and attitudes about the Internet high school. Activities in the first phase involved adhering to acceptable community protocols for research; identifying and liaising with research participants; and, reviewing the current education mandates. Participants reviewed Aboriginal ethnographies, community histories and documents, reports and school records, along with provincial and local curriculum themes and materials (see Agbo, 2006). We analyzed materials by delineating the attitudes, values and implicit patterns that demonstrate community perspectives and priorities. The second phase in Year 1 involved identifying community perspectives, opinions and attitudes about community partners and the research team began to identify the communities’ most significant issues concerning the Internet high school. Through ongoing problem posing in the form of dialogue with groups and individuals, a more complex and critical understanding of perspectives and issues was developed (Park, 1993; Hall, 1981; Maguire, 1987; Kemmis, 1991; Kemmis & McTaggart, 2003). The dialogic process involved face-to-face group meetings, teleconferencing, group discussions, fact-finding tours, and interviews.

Year 2 also comprised two phases: 1) Collective educational activities in teams; and 2) Classification, analysis and conclusion building. In Phase 1 of Year 2, we worked closely with communities to determine the social structures that encourage community members to express their views, concerns, or questions regarding the Internet high school in order to identify community priorities and how to incorporate these priorities into the mandate of the Internet high school. During this phase, we posed problems, identified possible causes, discussed possible solutions and prepared the criteria for evaluating possible actions. By the end of this phase, questions and themes that communities deem as priorities for further investigation or for action projects were compiled. Communities began to assume fuller responsibility for the project through workshops that encouraged group discussion and further understanding of the issues, and prepared participants for acting on the issues. One of this project’s central goals is to recognize and maximize the use of the abundant local resources and local knowledge to broaden and enrich the curriculum. Connected to this goal of knowledge recognition, Phase 2 of Year 2 aimed at increasing community research capacity by encouraging and providing the necessary tools to enable community members to become researchers in their own right. Year 2 was also a period of theory and policy development and a period for establishing the capacity for ongoing collaboration.

Year 3, that is, the current year and at the time of writing this paper, is focusing on the formulation of Action Projects. This final phase involves researchers and participants in deciding what actions to take to address the issues and priorities that have been collectively identified and analyzed. At this stage, community members are
moving from being partners to owners and beneficiaries of the research, realizing their potential and recognizing
their capacity to mobilize and act on their priorities. This phase is crucial to the policy component of the study as
information is analyzed, informing the building of related theories and policies.

**Group Discussions as a Dialogical Process**

In thinking of the dialogical process in participatory research, for example, a remarkable way in which
dialogue is embodied in research is through group discussion workshops. Group discussions offer the value of unity
and harmony and the promotion of a sense of personal and collective responsibility in the research process.
According to the Participatory Research Network (1982), "Group discussions are probably the most widely used
method in participatory research. They occur throughout the process, and are often used together with other
methods" (6). The Participatory Research Network (1982) suggests small numbers of 8, 12 or 25 who meet to solve
problems by sharing experiences, information and support. This study targeted groups of community people who
are active on school affairs, to act as an advisory or reference group for the project. Basically, this group advised on
what to do in the course of the project. Participants were encouraged to present and talk about their own ideas
especially about what changes they required for the Internet high school in the community. Before proceeding to a
conclusion of how participatory research can negate the paradox of tradition and modern technology, an example of
how group discussions were used as a dialogical process in the present study may be relevant.

For the workshops, an invitation was extended to as many as 45 people from the communities that took
part in the project. Attendance at the workshops ranged between 25 and 32 participants. These people were
composed of the school teaching and support staff, the Local Education Authority (LEA) members and some
community people. The purpose of the workshops was to pose problems, identify causes, discuss possible solutions
and evaluate actions (Participatory Research Network 1982). The themes of the workshops reflected the perspectives
of participants in relation to the status of culture and language in the community and in the Internet high school.

During each of the workshops, there were 3 groups with an average of 6 to 10 people in each group. A
group was made up of teachers, parents and band council workers, who constituted a research team that worked
together with a teacher as secretary. The group worked on one of three themes (research questions) of the study. For
example, the first group identified problems associated with the status of Aboriginal language and culture in the
Internet high school; the second group discussed how non-Aboriginal teachers could be culturally prepared to teach
First Nations students; and the third group worked on priorities for developing descriptors that would form the
components of a culturally-responsive curriculum. At the workshops, the groups discussed problems and strategies
for their solution. The university-based researchers acted as facilitators and joined in various group discussions.
After we spent the whole of the morning discussing issues in groups, we broke up for lunch and came back in the
afternoon to discuss group results in a plenary session. At these sessions, group secretaries presented their reports
for comments.

There were two-day group discussions workshops in each of the communities. The discussions generated
conditions under which people felt comfortable and free to speak. We used the group discussions to build a sense of
trust, support and cooperation as a group of people who shared the same ideas or problems. Our discussions allowed
us to sustain communication among us and also acted as productive interviews (Participatory Research Network
1982). The arrangement seemed to work very effectively as participants indicated that they found the exercise very
interesting. Sometimes, disagreements that resulted in arguments made it necessary for participants to take votes on
issues. If participants agreed, the general secretary documented the discussions and tape-recorded them to ensure
that important remarks were not overlooked. After the discussions, summary reports were produced and distributed
to all participants for their perusal and feedback. Sometimes participants drew attention to any issues that were
missed in the report.

**Conclusion**

The order in which the analysis proceeded was, inevitably, arbitrary and therefore concealed some
fundamental connections. These may now be clarified. I began this paper with the claim that indigenous
communities are rejecting forms of research based on an objectification of indigenous ‘other’ cultures in which
forms of research fail to measure themselves against the development needs of indigenous communities. Cultural
suppression in indigenous societies has been licensed by the hegemony that dominant cultures’ exercise in providing
political, intellectual, scientific and ideological symbols to subordinate groups of which the realities of culture are
often suppressed within social science research methodologies (Welch, 1993; McLaren, 2007; Agbo, 2005). This
paper is a call that represents a reaction against university-based positivistic or scientific methods of research in
indigenous communities. The premise for this call is that scientific modes of research in indigenous communities
fail to come to grips with the cultural reality of the people who figure in the research (Welch, 1993). The point of view that will help to restore some balance to the picture for a renewed confidence between university-based researchers and indigenous communities should be a paradigmatic shift. The implication of meaningful and relevant research relationship between indigenous communities and university-based researchers are that decisions, data collection, data analysis and action projects should be based on genuine attempts at developing mutual understanding rather than the university-based researcher playing the cult of the “expert” with an objectified analysis of the indigenous cultures.

Genuine and authentic research projects should be collaborative and decisions need to be negotiated and their implementation carried on with the wishes of community members. Arguably, part of the orientation that participatory research has brought about in the social sciences is the emphasis on the origin of the issues, process, and criteria of understanding rather than the traditional stress on objective knowledge that depends on object-like relations between the researcher and that which is to be researched. An important premise of participatory research is that for real understanding to occur, other cultures cannot be simply seen as objects to be experimented and studied. The effectiveness with which university-based researchers fulfill their mission in indigenous settings depends upon their understanding of themselves and those cultural environments in which they operate, and upon their acquiring the competencies necessary for them to function as effective collaborative researchers. In a departure from much previous work in research, participatory research removes the concept of research in indigenous communities from its current Eurocentric and scientific constraints to a collaborative, differentiated, and specialised referent, partly based on praxis and dialogue (Freire, 1970). The argument implies a need to reverse the tables on the sort of mindset implicit in academic research and on many similar reflections on indigenous knowledge. One of the main issues that should face university-based researchers in the twenty-first century is adhering to the third mission of the university and providing service to society. The implications for a meaningful and relevant service to the community are that cultural analysis necessarily begins with an examination of the degree to which research is negotiated and implemented with the wishes of indigenous societies rather than continuing to rely on objective academic knowledge and a scientific outlook that downplays indigenous epistemology.

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References


Informal Learning in the Netherlands

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Abstract: Lifelong learning (LLL) is a focal point of Dutch policy in relation to innovation, economic growth and social-cohesion. Prerequisite for LLL policy and implementation is knowledge of LLL participation of the working age population (18-64 years). Problem is that policy makers, government agencies and learning institutions only know the extent for formal LLL and not informal and non-formal LLL. This contribution represents the first large-scale study of participation in, barriers for and benefits of LLL in the Netherlands. Results show that in the Dutch labour force that younger workers make more use of LLL than older workers and those with higher levels of formal education participate more than those with lower levels. Perceived benefits include better job performance, keeping up with new knowledge, and better performance of new, job-related tasks. Barriers include lack of time, inconvenient time and place of LLL-activities, cost of LLL-activities, and a lack of employer support.

Introduction
Lifelong learning (LLL) has long been taken for granted as being essential for all people and thus as something that will ‘happen’, the idea being that people themselves would make the effort to continue to learn. Where attention was paid to LLL it was usually through continuing education programmes at universities or private organisations specialized in developing and delivering courses. Noteworthy is that most initiatives saw LLL as formal learning (e.g., an extension of formal education). Only recently has LLL become a focal point of Dutch and European policy in relation to innovation, economic growth and social-cohesion, often in conjunction with the perceived need to transform production workers into knowledge workers (CEDEFOP, 2009). With this focus, there has also been a broadening of the scope from formal lifelong education to informal and non-formal lifelong learning. Emphasising the importance of making informal learning visible and valuable is increasingly seen by government bodies as a way to expand LLL. Informal learning takes place outside formal education and training institutions. It encompasses all learning activities that are not formally organised, including learning at work, in leisure time and at home. Informal learning in the workplace encompasses, for example, on-the-job learning, working alongside more experienced colleagues (i.e., apprenticeship), working as part of a team, and learning from customers, clients and suppliers (Cheetham & Chivers, 2000, 2001).

However, before managerial decisions and policy guidelines can be drawn up about how to use and value informal learning, we must know how much informal learning is actually being undertaken by individuals, and what possible barriers exist to participation. In several countries this challenge has been taken up, with as a notable example the study by Cheetham and Chivers, (2000; 2001) in the UK, where 80 practitioners from 20 professions were interviewed, and a questionnaire survey among 372 practitioners from six professions was undertaken. Another noteworthy example is the Work and Lifelong Learning (WALL) survey was carried out in Canada by the Centre for the Study of Education and Work at Ontario Institute for Studies in Education at the University of Toronto (OISE/UT) in collaboration with the Research Network on New Approaches to Lifelong Learning (NALL). The WALL survey was conducted in 1998 and 2004 among a large representative national sample of 9063 adult (18+) Canadians (Livingstone, 1999; Livingstone and Stowe, 2007).

While there is data in the Netherlands on participation in formal LLL (i.e., adult education courses), there has been little reliable research on the fuller extent of Dutch engagement in LLL (i.e., informal and non-formal learning), and whether this learning is being used to its fullest potential in paid workplaces and beyond. The aim of the research be reported on here is to probe the Dutch population’s perception of key dimensions of paid and unpaid work and of their learning practices. We will address the following three basic questions:
1. What is the state of affairs of informal learning in the Netherlands? More specifically, what are the current forms, contents and outcomes of the array of informal learning activities of Dutch adults?
2. How have the outcomes of informal learning been used in the learner’s paid and/or unpaid work or in other contexts, and were the outcomes valorised?
3. What factors hamper informal learning as perceived by Dutch adults? What barriers do they feel keep them from engaging in informal learning?
This contribution presents data from an on-line survey which yielded 520 qualified responses from Dutch citizens between 18 and 64 years old. The analysis is based on descriptive statistics and non-parametric tests. The evidence displays a rich diversity in the informal learning patterns across the Dutch population. The value of the underlying study lies in the better understanding of informal learning in the Netherlands.

**Literature review**

Lifelong learning (LLL) is “...all purposeful learning activity, undertaken on an ongoing basis with the aim of improving knowledge, skills and competence” (Commission of the European Communities, 2000, p. 3). This concept is not new. LLL became a worldwide topic of discussion in the 1970s with the publication of a report by UNESCO which called for lifelong education as part of individual cultural and personal growth (Faure et al., 1972). The Organisation for Economic Cooperation and Development reconceptualised LLL by making it part of human capital theory (Field, 2001). The European Union gave LLL central prominence as part of the human capital requirements of the knowledge economy, and presented it as a key factor for the international competitiveness of European business and industry (Commission of the European Communities, 2000).

LLL, thus, is increasingly seen as central to the human capital requirements of our ever-developing knowledge economy and a key factor in maintaining the international competitiveness of Dutch and European business and industry. This is due to the fact that much valuable and non-trivial learning takes place outside formal programmes of instruction. Individuals learn and profit from experience in both formal educational settings (e.g., continuing education, in-house training) and informal settings (e.g., on-the-job/workplace learning and/or learning from media, museums). As such, LLL is an effect of conditions external and internal to individuals, and it has effects on an individual’s professional and personal life.

Traditionally, LLL is divided into three categories, namely formal learning, non-formal learning, and informal learning (for an excellent discussion of this see Van Merriënboer, Kirschner, Paas, Sloep, & Caniels, 2008). Formal learning - as related to LLL - is traditionally an extension of formal schooling which Livingstone (1999) defines as an “age-graded, hierarchically organized, formally constituted system... [with] credentialing programs to certify one's knowledge competencies for starting one's adult lives” (p. 50). The Cedefop glossary (Tissot, 2000, 2004) notes that it consists of learning that occurs within an “organized and structured context (formal education, in-company training), and that is designed as learning” (Tissot, 2000, p. 22). Formal LLL courses and programs are most often offered by traditional (or new) educational or training institutions and when extended into the adult years are often called continuing education. As such, they constitute the universe of formal LLL (actually lifelong education).

Non-formal learning is not provided by an education or training institution and does not typically lead to formal certification (Commission of the European Communities, 2000). It consists of learning embedded in planned activities not always explicitly designated as learning, but which contain important learning elements. As such it is structured in terms of, often, personal learning objectives, learning time, or learning support and is intentional from the learner’s point of view (Colardyn & Bjornavold, 2005). Somewhat confusing perhaps, Livingstone (1999) has called non-formal learning ‘explicit informal learning’ which he defines as learning experiences that take place outside of traditional institutions of learning, but involve the learner’s own conscious identification of the activity as ‘significant’ learning, the most important criteria being “the retrospective recognition of both a new significant form of knowledge, understanding or skill acquired on your own initiative and also recognition of the process of acquisition” (p. 53). Non-formal learning (or explicit informal learning) is, thus, “any activity involving the pursuit of understanding, knowledge or skill which occurs outside the curricula of educational institutions, or the courses or workshops offered by educational or social agencies...[and] undertaken on one's own, either individually or collectively, without either externally imposed criteria or the presence of an institutionally authorized instructor” (p. 3).

Finally, informal learning – according to the Commission of the European Communities (2000) - is learning that “results from daily life activities related to work, family or leisure. It is not structured (in terms of learning objectives, learning time and/or learning support). Typically, it does not lead to certification. Informal learning...is non-intentional (or incidental/random)” (Colardyn & Bjornavold, 2005, p. 22). It can, thus, be regarded as a tacit form of learning through everyday activities. Coombs (1985) defined informal learning as “the spontaneous, unstructured learning that goes on daily in the home and neighbourhood, behind the school and on the play field, in the workplace, marketplace, library and museum, and through the various mass media, informal learning is by far the most prevalent form of adult learning” (p. 92). Since informal and non-formal learning lie very close to each other and are often used interchangeably, we will use the term informal here.
In 2004 the Research Network on New Approaches to Lifelong Learning (NALL) carried out a telephone survey with a large representative national sample of the adult (18+) Canadian population (N=9,063) to provide quantitative detail on learning and work activities and their inter-relations. The survey confirmed that most adults' detectable individual and collective learning is comparable to an iceberg; only 10% visible at the surface, yet immense in its mostly submerged informal aspects (Livingstone, 1999). The survey assessed participation in four aspects of informal learning: employment related, community volunteer work related, household work related, and other general interest related. In each aspect, respondents were asked about informal learning activities on several specific themes. The questions used were developed to replicate the content of the Tough (1971) and Penland (1977) interview schedules, with appropriate revisions for changing circumstances (e.g., computer-based learning).

While there is much research and data on formal LLL in the Netherlands and outside (Wößmann & Schütz, 2006; Bassanini et al 2005), there is a dearth of reliable research and data on informal LLL and whether this learning is being used to its fullest potential in paid workplaces and beyond. The literature about LLL distinguishes several factors that might positively or negatively be related to informal LLL (see Bassanini et al (2005) and Desmedt et al 2006 for extensive overviews). Factors that are generally identified are:

- Personal traits: education level, age, family composition;
- Position on the labour market: working, without a job, inactive;
- Function characteristics: nature of the function, function level, part time job, temporary work;
- Company characteristics: size, orientation on technological and social innovations, HRM policy;
- Sectoral system: unions, pension rights, funds for on the job education;
- Policy aspects: subsidies for education; fiscal arrangements that promote education, social security, minimal duration of formal education, formal education infrastructure;
- Supply of adult education: content, form, place, costs;
- Macro-economic development: economic growth, labour developments; tightness labour market.

While there is little research on the characteristics of those engaged in informal learning, there are a few noteworthy general characteristics of lifelong learners. Personal characteristics such as age or educational background are expected to influence the engagement in informal learning (Berg & Chyung, 2008). However, the research on the relationship between age and informal learning shows inconsistent results. Tikkanen (2002), Livingstone and Stowe (2007) and Kremer (2005) show that less experienced, younger workers engage in more informal learning, while more experienced older workers view informal learning as less embedded in their work. Therefore older workers are less likely to engage in informal learning activities. In contrast, Livingstone (1999) and Berg and Chyung (2008) find that older people engage as much in informal learning as younger people. With regard to the association between the level of formal education and participation in informal learning activities, the results of previous studies are also inconclusive. Livingstone (2007) shows that with increasing educational attainment, the likelihood of participation in further education (formal as well as informal) increases. In contrast, Livingstone (2001) as well as Berg and Chyung (2008) find that the amount of time respondents spent on informal learning was about the same for all levels of education. The relationship between individuals' engagement in informal learning activities and having a paid or unpaid job is not often subject of study. Livingstone (2007) and Livingstone and Stowe (2007) report that the employed labour force is slightly more inclined to undertake informal learning activities than unpaid volunteer or household workers. Hence, the age of individuals, their education level and their position on the labour market are variables of interest in explaining the amount of time spend on informal learning.

We posit the following propositions:
1. The amount of time spent on informal learning increases as individuals are more mature (i.e., older).
2. The amount of time spent on informal learning increases as individuals are more educated.
3. The amount of time spent on informal learning increases as individuals have jobs.

**Method, sample and response**

To determine how the amount of time individuals spend on informal learning varies with their characteristics and the characteristics of their position in the labour supply, we developed an on-line questionnaire to be administered to an internet panel. This questionnaire was largely based on the WALL-studies questionnaire, but adapted to be used on-line (instead of a telephone survey in the case of WALL). It was also more focused on informal learning and was expanded to include employability indicators (Van der Heijde & Van der Heijden, 2006).

The questionnaire was distributed by an independent research bureau employing online research panels representative of the Dutch population. Respondents receive a small reward for participation, by means of participation points that can be exchanged for gift certificates. The bureau made it possible to choose a sample based
on geographic and/or demographic characteristics. The target respondents were Dutch citizens between 18 and 65 years old. A decision was made to include no more than 10% freelancers and 10% unemployed.

To increase validity and reliability of the survey instrument and data collected the questionnaire was reviewed by two academic experts on informal learning and one practitioner in human resource management, resulting in several adaptations of the exact wording and layout of items and response options. The data were collected during autumn 2009. The final questionnaire was administered via e-mail with a link to the online survey to 800 Dutch citizens. Three e-mail invitations were returned as undeliverable. A total of 797 invitations were assumed to have reached the intended recipients. A total of 600 completed questionnaires were returned, of which 51 were incomplete. For each respondent the amount of time spent on the answering the questions was noted, leading to elimination of 29 questionnaires, because the respondents had filled it in too quickly to be taken seriously. A total of 520 usable responses remained for analysis, yielding an effective response rate 65.2%, which was seen as very satisfactory for a survey of this length and kind (Kumar et al., 1995; Malhotra & Grover, 1998). Complete anonymity was assured to reduce social desirability bias and to increase response rate.

One advantage of using an online questionnaire is that there are very little missing data. As foreseen, the most missing data related to time spent on informal learning per week (12.1%). This leaves us with 457 usable observations for all other questions.

The questionnaire contained demographic questions such as age, sex, current job position, work experience, and educational level. Respondents were also asked to report the benefits that they perceive to be attached to the informal learning they undertook. Indicators of employability, such as subjective career-success and occupational expertise were used for this. Subjective career-success was measured with the measurement scales ofGattiker and Larwood (1986) on a 5-point Likert scale. Occupational expertise (i.e., expertise needed to adequately perform the various tasks and responsibilities of a job) was measured as a construct variable, using 15 items from Van der Heijden et al. (2009) and Van der Heijde and Van der Heijden (2006) on a 6-point Likert scale. Furthermore, reasons for not engaging in informal learning were investigated.

**Findings**

Descriptive data on the dependent variable (i.e., hours per week spent on informal learning) and the independent variables, as well as other demographic characteristics of our sample are presented in Table 1. With respect to the dependent variable, people averaged 5.26 hours per week on informal learning. Of the respondents 59.8% was male and 40.4% female (see Table 1). Compared to the Dutch average of 54.3% male and 45.7% female in 2008 (Central Bureau of Statistics, 2010) our sample has slightly more males and less females. At the time of the survey 12.3% of the respondents held a doctoral or master degree as their highest degree earned, 24.5% a (professional) bachelor degree, 13.3% a high school degree (senior level), 40% a secondary vocational degree (in Dutch “MBO” or “MAVO/MULO”) and 10% a lower degree or no degree at all. Our sample is quite representative for the total Dutch labour force for which respectively the percentages are 11.6, 21.1, 8.1, 34.8, and 23.6. The average age of the respondents was 40 (Dutch average in the labour force is 39.9 years). Most respondents had average yearly wages of between 30,000 and 40,000 euro in 2008. For the total Dutch labour force the average yearly wages are 33,400 euro per year (Central Bureau of Statistics, 2010).
Table 1: Descriptives for dependent and independent variables

<table>
<thead>
<tr>
<th>Continuous scale</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>520</td>
<td>18</td>
<td>64</td>
<td>40</td>
<td>11.65</td>
</tr>
<tr>
<td>Hours per week in paid job</td>
<td>450</td>
<td>0</td>
<td>60</td>
<td>34</td>
<td>9</td>
</tr>
<tr>
<td>Hours per week spent on informal learning</td>
<td>457</td>
<td>0</td>
<td>80</td>
<td>5.26</td>
<td>8.43</td>
</tr>
<tr>
<td># jobs in past 5 years</td>
<td>450</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Family members</td>
<td>520</td>
<td>1</td>
<td>7</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interval scale</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational expertise (15 items, α = 0.924)</td>
<td>457</td>
<td>1</td>
<td>6</td>
<td>4.61</td>
<td>0.55</td>
</tr>
<tr>
<td>Subjective career success (7 items, α = 0.729)</td>
<td>457</td>
<td>1</td>
<td>5</td>
<td>3.36</td>
<td>0.52</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ordinal scale</th>
<th>#Categ.</th>
<th>Min</th>
<th>Max</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education level (highest diploma)</td>
<td>520</td>
<td>15</td>
<td>None</td>
<td>PhD</td>
</tr>
<tr>
<td>Yearly wages (euros)</td>
<td>334</td>
<td>12</td>
<td>0</td>
<td>90,000-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dichotomous scale</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>520</td>
<td>40.4%</td>
</tr>
<tr>
<td>Employed</td>
<td>520</td>
<td>87.9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Job dynamics in past 5 years</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First job acquired</td>
<td>520</td>
<td>13.7%</td>
<td>86.3%</td>
<td></td>
</tr>
<tr>
<td>Promotion</td>
<td>520</td>
<td>17.3%</td>
<td>82.7%</td>
<td></td>
</tr>
<tr>
<td>Changed jobs</td>
<td>520</td>
<td>37.9%</td>
<td>62.1%</td>
<td></td>
</tr>
<tr>
<td>Became unemployed</td>
<td>520</td>
<td>8.7%</td>
<td>91.3%</td>
<td></td>
</tr>
<tr>
<td>Full-time → part time / vice versa</td>
<td>520</td>
<td>10.6%</td>
<td>89.4%</td>
<td></td>
</tr>
<tr>
<td>Maternity leave</td>
<td>520</td>
<td>7.5%</td>
<td>92.5%</td>
<td></td>
</tr>
<tr>
<td>None of the above changes</td>
<td>520</td>
<td>60.4%</td>
<td>39.6%</td>
<td></td>
</tr>
</tbody>
</table>

Our sample indicates that in the age groups 30 to 39 and 50 to 59 the least number of hours is spent on informal learning. When we look at gender differences, we see that the average amount of time spent per week on informal learning activities is high for males that are at the beginning of their professional career (i.e., between 20 and 29 years of age) as well as males in the final stage of their professional career (i.e., older than 60 years of age) (see Figure 1). Females are most engaged in informal learning when they are between 40 and 49 years.

When a bivariate correlation was calculated between age and informal learning, a significant negative correlation was found (Pearson’s $r = -.117$, $p = .006$), indicating that younger people spend more time on informal learning than more older people.
Table 2 shows the average number of hours per week spent on informal learning by education level. Individuals with a middle level secondary education are most engaged in informal learning activities (52%). A second large group are those with a university bachelor degree (25%). When we look at the percentage of people with a certain education level engaged in informal learning, we see that 95% of those with a master degree spend time on informal learning activities, while only 63% of those with lower level secondary education spend time on informal learning activities. Table 2 also shows that in 73% of the cases people spend between 1 and 10 hours per week on informal learning. Only 3% spends more than 21 hours per week.

Table 2: Average number of hours spent on informal learning by education level

<table>
<thead>
<tr>
<th>Informal learning (in hours)</th>
<th>0</th>
<th>1-10</th>
<th>11-20</th>
<th>&gt;20</th>
<th>Total within table N</th>
<th>% informal learning by education level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower level secondary ed.</td>
<td>15</td>
<td>3%</td>
<td>22</td>
<td>5%</td>
<td>1 0% 2 0%</td>
<td>40 9%</td>
</tr>
<tr>
<td>Secondary ed (middle level) and high school degree</td>
<td>49</td>
<td>11%</td>
<td>169</td>
<td>37%</td>
<td>13 2% 8 2%</td>
<td>239 52%</td>
</tr>
<tr>
<td>Bachelor degree</td>
<td>10</td>
<td>2%</td>
<td>94</td>
<td>21%</td>
<td>6 1% 5 1%</td>
<td>115 25%</td>
</tr>
<tr>
<td>Master degree</td>
<td>3</td>
<td>1%</td>
<td>50</td>
<td>11%</td>
<td>10 2% 0 0%</td>
<td>63 14%</td>
</tr>
<tr>
<td>Total</td>
<td>77</td>
<td>17%</td>
<td>335</td>
<td>73%</td>
<td>30 7% 15 3%</td>
<td>457 100%</td>
</tr>
</tbody>
</table>

Table 3 shows the distribution of employment hours. Of the male respondents, 82% work 30-40 hours per week. For women the largest group (36%) works 20-29 hours per week. Table 4 shows the distribution of time spent on informal learning activities. By far the largest category those who work between 30 and 40 hours and are engaged in informal learning between 1-10 hours. Bivariate correlation between hours worked per week and informal learning, yielded a nonsignificant and almost non existing relationship (Pearson’s $r = -.005, p = .454$).

Table 3: Average paid employment hours worked per week, continuously employed Dutch Labour Force

<table>
<thead>
<tr>
<th>hours/week</th>
<th>male</th>
<th>female</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-19</td>
<td>7 3%</td>
<td>25 14%</td>
<td>32 7%</td>
</tr>
<tr>
<td>20-29</td>
<td>13 5%</td>
<td>65 36%</td>
<td>78 17%</td>
</tr>
<tr>
<td>30-39</td>
<td>105 39%</td>
<td>56 31%</td>
<td>161 36%</td>
</tr>
<tr>
<td>40</td>
<td>115 43%</td>
<td>32 18%</td>
<td>147 33%</td>
</tr>
<tr>
<td>41-49</td>
<td>18 7%</td>
<td>2 1%</td>
<td>20 4%</td>
</tr>
<tr>
<td>≥50</td>
<td>11 4%</td>
<td>1 1%</td>
<td>12 3%</td>
</tr>
<tr>
<td>Total</td>
<td>269</td>
<td>181</td>
<td>450</td>
</tr>
</tbody>
</table>
Table 4: Informal learning vs average paid hours worked per week, continuously employed Dutch Labour Force

<table>
<thead>
<tr>
<th>hours/week</th>
<th>0</th>
<th>1-10</th>
<th>11-20</th>
<th>&gt;21</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-19</td>
<td>7</td>
<td>2%</td>
<td>23</td>
<td>5%</td>
<td>32</td>
</tr>
<tr>
<td>20-29</td>
<td>17</td>
<td>4%</td>
<td>54</td>
<td>12%</td>
<td>78</td>
</tr>
<tr>
<td>30-39</td>
<td>21</td>
<td>5%</td>
<td>121</td>
<td>26%</td>
<td>161</td>
</tr>
<tr>
<td>40</td>
<td>23</td>
<td>5%</td>
<td>112</td>
<td>25%</td>
<td>147</td>
</tr>
<tr>
<td>41-49</td>
<td>2</td>
<td>0%</td>
<td>14</td>
<td>3%</td>
<td>20</td>
</tr>
<tr>
<td>≥50</td>
<td>5</td>
<td>1%</td>
<td>7</td>
<td>2%</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>77</td>
<td>17%</td>
<td>335</td>
<td>73%</td>
<td>457</td>
</tr>
</tbody>
</table>

Little research has been conducted on the perceived value of informal learning. Table 5 shows what respondents indicated as results of their informal learning. It shows how the outcomes of informal learning have been used in paid and/or unpaid work or in other contexts, and whether they were valorised. The majority of respondents indicate that informal learning helps them do their job better and keep up with new knowledge in their area of expertise. With respect to valorisation, 17.7% indicates that informal learning is needed to keep their job, 13.7% it helps increase income and 11.6% that it increases chances for promotion.

Career success (Van der Heijde and Van der Heijden, 2006) and self reported occupational expertise (Van der Heijden et al., 2009) can indicate a person’s perceived career potential. We expect a positive relation between informal learning and career potential. However, a bivariate correlation between informal learning and perceived career success yielded a negative nonsignificant correlation (Pearson’s $r = -.019$, $p = .344$), indicating that informal learning is not perceived as being related to career success. This is also the case for informal learning and self reported occupational expertise (Pearson’s $r = -.028$, $p = .273$), indicating that people who spend much time on informal learning activities do not feel that they have much expertise. A possible reason is that may be precisely the group that feel that they have a lot to learn, and are not yet successful in their job, are the ones that engage most in informal learning activities.

Table 5: Benefits attached to informal learning (N=380)

<table>
<thead>
<tr>
<th>Informal learning helps me to …</th>
<th>%</th>
<th>Informal learning helps me to …</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>perform my job better</td>
<td>80.3</td>
<td>acquire knowledge about job health and safety aspects</td>
<td>17.6</td>
</tr>
<tr>
<td>keep up with new knowledge</td>
<td>72.9</td>
<td>acquire knowledge about labour conditions and rights of employees</td>
<td>15.5</td>
</tr>
<tr>
<td>perform new tasks in my job better</td>
<td>56.8</td>
<td>increase my income</td>
<td>13.7</td>
</tr>
<tr>
<td>build computer skills</td>
<td>44.7</td>
<td>increase my knowledge of foreign languages</td>
<td>11.8</td>
</tr>
<tr>
<td>develop teamwork, problem solving or communicative skills</td>
<td>41.8</td>
<td>get a promotion</td>
<td>11.6</td>
</tr>
<tr>
<td>work with new machines</td>
<td>32.4</td>
<td>further develop financial management skills</td>
<td>11.3</td>
</tr>
<tr>
<td>further develop planning- or management skills</td>
<td>25.8</td>
<td>find a job</td>
<td>6.1</td>
</tr>
<tr>
<td>acquire insights into power structures at work</td>
<td>19.5</td>
<td>keep my own business</td>
<td>2.9</td>
</tr>
<tr>
<td>keep my job</td>
<td>17.9</td>
<td>Other</td>
<td>7.4</td>
</tr>
</tbody>
</table>

The question remains why individuals choose not to engage in informal learning. What factors hamper informal learning in the perception of Dutch adults? In this study we investigated intrinsic and extrinsic factors perceived as learning barriers (McCracken, 2005). Intrinsic factors are attributed to the individual’s perception, motivation and emotions. Extrinsic factors are associated with a person’s external environment, categorised as organisational culture, management development culture and physical resource factors. Table 6 shows the barriers respondents
perceived as keeping them from engaging in informal learning. The main reasons are: lack of time (61.2%), inconvenient time and place of informal learning activities (20.9%), and cost (19.4%). These three reasons are categorized by McCracken (2005) as extrinsic factors that have to do with physical resource pressures. Apparently, individuals perceive the demands on themselves as very high. This causes time and resource pressures to impact their ability to devote time to informal learning activities. Typical intrinsic factors such as fear of failure and “don’t need more education” were only reported by 2.2% of the respondents as hampering informal learning.

Table 6: Factors hampering informal learning (N=134)

<table>
<thead>
<tr>
<th>Factor</th>
<th>%</th>
<th>Factor</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of time</td>
<td>61.2</td>
<td>Activities take place in an unfriendly environment</td>
<td>3.0</td>
</tr>
<tr>
<td>Inconvenient time and place of activities</td>
<td>20.9</td>
<td>Fear of failure</td>
<td>2.2</td>
</tr>
<tr>
<td>Activities are too expensive</td>
<td>19.4</td>
<td>No need for more education</td>
<td>2.2</td>
</tr>
<tr>
<td>Lack of employer support</td>
<td>10.4</td>
<td>Undertaking learning activities is boring</td>
<td>0.7</td>
</tr>
<tr>
<td>Family responsibilities</td>
<td>6.0</td>
<td>Lack of availability of child care</td>
<td>0</td>
</tr>
<tr>
<td>Health problems</td>
<td>3.7</td>
<td>Other</td>
<td>11.9</td>
</tr>
</tbody>
</table>

Discussion and conclusion

The results of this study give insight in the state of affairs of informal learning in the Dutch labour force. The findings are consistent with Tikkanen (2002) and Kremer (2005), in that younger people are more engaged in informal learning than older, more experienced people. This may be viewed as surprising, as it might seem logical that older people would be more interested in personal development not necessarily directly related to their work. Livingstone (1999) shows in this respect that older individuals tend to undertake more individual (rather than social) forms of informal learning. However, our results might be due to the tendency Tikkanen noted, that young people see working as learning. They feel that they need to gain experience in their job, and a large part of acquiring this experience induces informal learning activities, such as working alongside others, tackling new and challenging tasks (Eraut, 2004), mentoring, coaching and networking (Cheetham & Chivers 2001; Marsink & Watkins, 1990).

Other personal characteristics often proposed as influencing informal learning are educational level and position in the labour market. Our research confirms that those with higher levels of formal education are more likely to participate (Brunello, 2001; Desmedt et al., 2006; Livingstone & Stowe, 2007). This can be explained by their recognising that every form of additional education gives a cumulative advantage to those with more education, while those with less education perceive additional education as bestowing fewer advantages (Wößmann & Schütz, 2006). Moreover, informal learning might even carry social and psychological risks to lower educated individuals, since they might lose connection to their social class (Desmedt et al.). With regard to the relationship between hours worked per week and informal learning, there was no significant relationship. This supports Livingstone and Stowe who report that those who work fewer hours are no less reliant on job-related informal learning than full-timers. They only find weak associations between hours of paid work and participation in informal learning, and the relationship only holds for one particular time frame.

With regard to perceived benefits of time spent on informal learning activities, we did not find a positive association with perceived career success or self reported occupational expertise. The cause for this might lie in the time lag between (1) engaging in informal learning activities, (2) actual learning taking place, and (3) experiencing career benefits from learning. It is likely that individuals who are very engaged in informal learning, do so simply because they want to improve their career success and occupational expertise. Hence, they feel that these indicators are not yet at a satisfactory level.

Barriers to participation in informal learning activities in our sample predominantly stemmed from extrinsic factors, such as lack of time, inconvenience of time and place of LLL-activities, the cost of LLL-activities and the lack of employer support. These results bring a special conundrum with them. If the activities include informal learning – that is learning from daily life activities related to work, family or leisure which is not structured (in terms of learning objectives, learning time and/or learning support), then how is it possible that there is not enough time, that the time and place is inconvenient and that the costs are too high? The simple answer to this is that the general population / labour force still does not recognize what informal LLL is and still sees LLL as being something akin to lifelong or continuing education; that is something you do at a certain time and place. This is compounded by the fact that they respondents feel that they can valorise their informal LLL at their place of employment.

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Though this research presents nothing less than a giant step in understanding the magnitude of participation of the Dutch labour force in LLL and the perceptions that they have related to informal LLL in the Netherlands, the major limitation is that it is purely descriptive and correlational. As such it provides a basis for policy, but also for further research that is more causal in nature. This will, in turn, lead to better decisions as to how LLL can be implemented and used for innovation, economic growth and social-cohesion, in conjunction with the transformation of Dutch production workers into knowledge workers.

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Developing graduate employability through internships: new evidence from a UK university

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Abstract: This paper discusses the development of a university led graduate internship programme developed by Thames Valley University in the UK. The programme included a 6 week graduate placement with an employer and completion of an intensive university based preparatory course. The views and perspectives of graduate interns are analyzed. Quantitative and qualitative data have been collated through a survey of pre and post scheme participants. The project is ongoing and results are tentative. Preliminary analysis reveals that on entry to the programme significant variations in life orientation indicators based on gender, ethnicity and age were identified. Females reported significantly higher job confidence, positive emotions and career perspective responses than males. Qualitative feedback suggests that the university support programme had a positive impact. A focus on employer oriented presentation skills appears to have had the greatest beneficial impact on participants. The implications for undergraduate curriculum design are highlighted.

Introduction and background

This paper reviews the rationale, design and progress in developing graduate employability through a graduate internship scheme developed by Thames Valley University in the UK. Recent survey evidence from the Confederation of British Industry (2010) in the UK showed that employability skills were the top priority of 77% of employers when they assessed graduates. The same survey revealed that 65% of employers believed that gaining practical experience was the most appropriate way for individuals to improve their prospects.

It is beyond the remit of this paper to critique the wider university skills and knowledge literature as it relates to “graduateness”. Suffice it to say that the authors do not challenge the central enriching role of university education that Newman (1858) and so many others have elegantly championed. University learning undoubtedly delivers individual, societal and scientific benefits far removed from the employability agenda. Within this paper however graduate employability is looked at from the perspective of the graduates and their immediate practical priority: finding employment (in many cases for the first time). The graduate identity model as proposed by Holmes el al. (2001) is a useful reference here by emphasizing the development of graduate fluency in communicating and demonstrating the attributes and skills as used and understood by employers. We define graduate skills and attributes as those understood and valued by employers. So a working definition of graduate employability would involve the ability to demonstrate both the higher level technical skills (derived largely from their degree subject area) and a range of other characteristics. Binks and Exley (1992) as cited by Nabi and Bagley (1998) classify these into three main groups: personal attributes (such as team working), communication attributes (written and oral) and problem solving attributes (such as judgment and decision making). The combination of these skills and the capabilities are perceived by employers to have the potential to add value to an organisation.

Graduate employability is arguably at the heart of every university’s mission. Today a combination of increasing graduate numbers, rapid technological and societal change and severe economic recessionary forces are presenting special challenges for new graduates everywhere. This paper presents a local UK university response to these issues as a case study example. The development of a Graduate Internship programme is used to examine how universities can deliver employer based learning and deliver benefits to the learner, university and employer. The scheme will be described and research survey results to date used to illustrate how graduates have benefited from the scheme. A taught university element has been integrated into the internship in the form of three modules delivered in the university. The rationale and pedagogy used will be highlighted as will the implications for the development of undergraduate programmes in general.

Thames Valley University is a medium sized institution based in West London, UK with a vocationally oriented curriculum and a long tradition of innovative delivery in work-based learning. TVU Future Skills is the university’s employer engagement unit which identified and led the development of the programme. During 2009 the unit applied for and was awarded 100 internship places funded by HEFCE - the university funding agency in
England. The unit has since been awarded a further 250 internship places and the scheme is now one of the largest of its type in the country. Future Skills staff recruit interested graduates and employers and manage the scheme.

The project has been designed with three key principles in mind:

1) Financial support: in order to avoid recruitment bias against those on low incomes a payment of £1600 is made to each intern.
2) A live employment project: delivery of a supervised 6 week employer based graduate project which gives each participant experience of a live work environment
3) University support: an intensive taught element which supports and enhances the intern’s live project work university level preparation for the employer project and also the world of work. Interns also have full access to other university support services such as the Careers and Employment Unit.

Eligibility requirements have been set as flexibly as the funding processes allow. The scheme is open to any recent graduate from a UK university who is either unemployed or “under employed” in a non graduate level job. There are no restrictions in terms of subject area although each person must have completed the final coursework of their degree. Interested parties were invited to a briefing session where the scheme was outlined and one to one discussions allowed FutureSkills staff to get a clear picture of the individual’s interests, skill set and aspirations. This information is crucial because it is used to match candidates to employer graduate projects. When a match is identified between employer project requirements and the individual’s skill set their CV is sent to the employer with a recommendation to interview. Both intern and employer need to be satisfied with the match before this is confirmed. The intern pays no fees for the programme although each employer is charged.

The formal programme lasts for 8 weeks with 2 weeks intensive study classes based in the university and 6 weeks working with an employer. Interns are then offered the opportunity to reflect on their experience and finalize coursework in the 4 weeks following the formal element.

The taught element of the initiative comprises three level 4 undergraduate modules:

- Managing your career - with a focus on reflective learning, skills development and career planning
- Presentation skills - developing and presenting an effective personal image to prospective employers
- Vodcasting - creating and editing film based outputs and disseminating these via web based systems.

The employer based projects themselves encompassed a wide range of organizations from SMEs with a handful of staff to multi national corporations. Although there were no restrictions on geographic location, the vast bulk of these projects took place in West London and surrounding areas. Typically each project would focus on a distinct task such as researching an export market for a product or creating a web site. In each case the employer had to justify that the project was appropriate work for a graduate. The distinction made was that it could not be simply a transactional or repetitive task, rather the project should be transformational in nature, developing new innovative practices within the organization. Examples of employer project requests included the following:

‘Someone who wishes to gain experience in project management – potentially in a research setting, high level of telephone communication skills, very good levels of literacy, high level of IT skills and ability to think clearly and laterally and solve problems independently’ (company 1)

‘To assist in the scheduling of a major research project ... which will involve contacting schools and research consultants and establishing a project delivery schedule’ (company 2)

‘Development of competitive intelligence framework for a marketing plan’ (company 3)

**Method**

A research project plan was devised when the original funding bid was submitted. Key ethical considerations centered on striking a balance between collating intern views in an unobtrusive manner; allowing consent for participants to engage in the study and ensuring interns were not identified in any research outputs. Finally Chinese walls were created to ensure intern opinions and views of the programme were not accessible by
teaching staff. Ethical approval for the methodology was gained from the relevant TVU faculty Ethics Committee in early 2010. The principal quantitative investigative method was via a participant survey. Each individual who attended a briefing session on the programme and wished to join the scheme was asked to complete a research questionnaire. The vast majority of prospective interns were happy to complete the survey and saw it as a way to highlight the challenges graduates face in the labour market.

The questionnaire included demographic details of the individuals, employment record, perception of social class and social background along with graduates’ career aspirations and expectations of the intern programme. A series of psychological indicators were measured including life orientation (Life Orientation Test, Scheier & Carver, 1985); positive emotions (Positive and Negative Affect Scale, Watson, Clark & Tellegen, 1988); job seeking confidence, and career perspective (Career Commitment Scale, Ellemers, Gilder & Heuvel, 1998).

Interns who were completing the programme were asked to complete a stage 2 questionnaire. The purpose of this was to get comparative end of work placement analysis and allow before and after analysis. Both questionnaires included some qualitative elements to record views on key issues related to graduate employability and the efficacy of the scheme. The methodology uses a mixed-methods approach triangulating quantitative questionnaire measures with qualitative prompts. Data from the surveys were collated in SPSS and analysis of variance (ANOVA) was used to examine demographic differences upon entry.

Information was supplemented with in depth interviews with colleagues involved in programme design and delivery. The next stage of the methodology will involve repeated measures and mixed model ANOVAs will be employed to examine changes across the course of the programme and to identify if such changes are more or less pronounced for various demographic groups.

**Results**

Preliminary data are based on over 100 graduates who attended the briefing sessions. In demographic terms the group was broadly split between male and female participants (48% and 52%) respectively. The age range varied from 21 to 48 with 23 year olds accounting for 20% of the total group. Results from an ethnicity questionnaire showed a broadly based ethnic mix. Figure 1 shows that white and black African were the largest self reported ethnic groups (accounting for over half of all participants).

Figure 1 Self reported ethnicity categories of entrants

![Figure 1 Self reported ethnicity categories of entrants](image)

Figure 2 shows the results of a question relating to participants’ socio economic background. Nearly half consider themselves middle class. This in itself is a surprisingly high figure and is certainly in contrast to the perceptions of university staff who met the prospective interns. More investigation will therefore be required to explore the reasons for this apparent social-economic reporting inflation.
Figure 2 Socio Economic Background

Figure 3 shows a breakdown of the degree classification of participants. This shows that this group of graduates comprised generally high academic achievers with 63% achieving an upper second or first class degree award.

Figure 3 Degree Classification breakdown

With regard to gender differences figure 4 shows males were significantly lower in job seeking confidence on entry (p<.05; even when using the more stringent ‘reliable’ job confidence score ), and they were also marginally lower in positive emotions (p=.08) and in their overall career perspective indicators (p<0.5) One could argue that this is because they are less likely to report positive emotions, however the means for all variables show a less positive profile of men on entry.
Figure 4 gender and job confidence on entry indicators

Figure 5 summarizes the employment status of the group and shows nearly half were unemployed and receiving some form of unemployment benefit (48%). However, nearly 30% were in some form of employment which tended to be either part time or temporary in nature. Interestingly 18.5% said they were unemployed but not signing on for benefits which may be a reflection of the stigma attached to applying for benefits and also perhaps the relatively low financial support available to the unemployed in the UK. Of course many of these students had continued to work part time throughout their undergraduate period of study. For some the challenge was therefore not finding work but finding work that could be either equated to graduate level in terms of income and responsibility or at least offered a stepping stone to achieving this aim.

Figure 5 Employment status on entry
Figure 6 shows that white participants gave significantly lower pessimism scores on entry to the programme. Analysis of ethnic sub groups has not been possible given the current sample sizes which have been collated.

Figure 6 Life orientation indicators in white and non white entrants

The white participants are significantly lower in pessimism on entry (p=.05). \[F(1, 156)= 3.84, p=.05\]

The impact of age on life orientation is illustrated in figure 7. There was a highly significant age difference, whereby those in their 20s are significantly less pessimistic than those in their 30s and 40s but it is important to note the groups are uneven as most are in their twenties (p=.003). \[F(2, 146)= 5.94, p<.05\]

Figure 7 impact of age on life orientation
11% of the total group reported that they considered themselves to be disabled. There were no significant differences between disabled and non-disabled graduates on entry, except a marginal finding of lower job confidence (p=.09).

Qualitative comments on the programme have also been collated via the entry and completion questionnaires. When entrants were asked why they had chosen to apply for the internship programme they tended to use words such as enhance skills, confidence and to build up contacts. Typical comments included:

‘I have qualifications; however I do not have work experience to back up my skills. I applied for the internship to gain experience and confidence to enter employment that reflects my qualifications’.

(student A).

‘This internship would give me the needed relevant work experience. It is very important, during these difficult economic times for a graduate, because having just a degree means very little these days’.

(student B).

‘I feel it will make me more confident in my approach to people and to how I carry out given tasks. I think it will challenge me and help me to network with people that would be beneficial to my future career’.

(student C)

‘The job market seems really competitive. A good education is not all that is needed now, companies want experience which seems hard to get, which is why this internship scheme is so appealing. It will allow me to stand out from other candidates not just for having a good education but for having all round skills’.

(student D)

When asked what barriers were preventing them from achieving their career goals individuals mentioned a range of factors from lack of experience to personal issues.

Post internship questionnaire data is currently being collated so much of our analysis to date is in the form of qualitative statements from completers.

Those who have completed the programme tended to refer back specifically to the taught element. For example:

‘I enjoyed the modules that were taught. At times we did need to do things that require you to buck up a bit of courage e.g. presenting to the public. These can be a little daunting, never-the-less it is necessary in order to make the required progress’.

(student E)

‘My first week and the last week at TVU have been fantastic. I gained presentation and public speaking skills and on my placement I discovered research skills I never knew I had’.

(student F)

In several instances interns specifically mention the new approaches they will now take in marketing themselves to potential employers for example:

‘I have learnt to sell myself, how to approach job applications and interviews, so much so that the job I am temporarily filling at the moment even commented (at interview) on my body language and eye contact abilities and said that it was on this basis I got the job (thanks named lecturer)’.

(student G)

‘Yes, I am much more aware of the effectiveness of a good Powerpoint presentation. Before I didn’t really understand technology and how to use it to complete my image but this course has helped to combine the two’.

(student H)
The importance of carrying out detailed research on prospective employers and their requirements has also had an impact:

‘Be more proactive and do research that is relevant to the types of job I want in order to have a good chance at finding the right roles. I will also change my attitude and the way I present myself to potential employers so I can give them a great first impression’.

(student I)

‘Previously I was content with just sending off my CV/application form, but now I feel I’m in a position to be more direct and proactive – I will aim to network more and be more adamant about showing prospective employers what I can do/have done’.

(student J)

Discussion

These findings present a snapshot of the perceptions of a group of UK based graduates as they enter the labour market. Results here cannot be said to be representative of all graduates, many of whom move straight into graduate level work after graduation.

What we can see is an emerging picture of a diverse graduate population seeking support to both understand the demands of employers and attempting to find the most effective means of targeting and communicating their attributes and skills. As results come through, a clearer picture of the scheme’s impact will emerge. Most interns were attracted to the project specifically for the work experience element. However, the majority of participants clearly perceived significant individual benefits from the intensive, taught modules.

The pedagogy of the managing your career and presentation skills modules were designed to provide graduates with the skills necessary to evaluate their career plans and enhance their marketability to employers. The focus of the careers module is on self-reflection, identifying strengths and weaknesses and areas of future self-development. Assessment is portfolio based with each intern maintaining an on-line reflective journal during the course of their internship. Other elements of the portfolio assessment approach include a career development plan and a 1000 word reflective piece on the impact of the internship.

A UK employer study from The Council for Industry and Higher Education (2008) found that communication skills were rated as the most highly valued graduate capability by 86% of respondents. The presentation skills module is designed to provide the skills and techniques necessary for interns to evaluate and market their own key skills and attributes to potential employers. Mock interviews were conducted to develop these skills and individuals were able to learn from best practice examples from other members of the group.

The rationale for the selection of the third module was more prosaic. This module was designed to expose the interns to an aspect of new technology (film and camera use) with which most had little or no experience. It was felt this would be appropriate on a number of different levels: for example as a demonstration to an employer of an example of rapidly learning and applying a new technical skill. The technology can also be widely applied in presentations and be utilized in web based social marketing settings. The development team also thought it would be a fun thing to learn!

What role should universities play in developing internship opportunities? Is there a role for universities in facilitating internships as a method of developing and enhancing knowledge transfer activities in its broadest sense? The tentative findings here point to the central role universities themselves can play as the key catalyst and agent for driving forward the employability agenda. There is, for example, a significant opportunity for universities themselves to employ graduates on an internship basis. The sheer size of most universities as major employers provides opportunities for institutions to lead by example here. Indeed, in the current economic climate, this will produce economic benefits to universities just as surely as it will provide learning opportunities for graduates.

The implications of the study on the development of mainstream undergraduate curriculum pedagogy at least in the UK are also quite profound. Despite the emphasis placed on employer based learning, the role of the university in facilitating this and preparing graduates for their placements was critical. The authors had anticipated that intern feedback would stress the value of the employer contact and experience. Why were the undergraduate modules on career planning and presentation skills apparently having such an impact on graduate interns? The work experience element per se was valued by most interns but many were already undertaking part time work of one type or another. There is an important discussion point here related to the appropriateness and distinctiveness of university led work relevant and work based learning. The preparatory taught element seems to have enabled interns to draw out and market themselves and communicate the transferable skills they possess in a narrative relevant to employers. To what extent should such elements be fully integrated into all undergraduate programmes? The advancement of intensive employability training embedded within all undergraduate curriculum areas is clearly
one option. Indeed the university is already doing this in many undergraduate courses including its psychology programme. Another option TVU is exploring is to extend and enhance the role and scope of undergraduate placement opportunities to all undergraduates.

The internship programme will continue and further analysis of existing and future cohorts will allow for the collation and analysis of detailed comparative information from significant numbers of individuals. Tentative results to date look encouraging and certainly warrant further study in order to fully understand differences in indicators associated with social class, ethnicity, gender and educational background. The data set will continue to be built up as part of a longitudinal research exercise to review the long term impact of such schemes on individuals, employers and institutions.

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Improving the Involvement of Higher Educational Institutions in Regional Learning Networks

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My paper will explore a future line of research within the School of Management (Open University, the Netherlands). Consequently, its nature is conceptual in the first place. Secondly, it uncovers the design of the research.

The involvement of organisations (companies, institutions) in learning networks is considered a major contribution to the economic, social and cultural development of a region (Lorenzen, 2007; Porter, 2005). The prevailing view is that higher education institutions (HEI) can contribute significantly to regional development. Three fields of involvement are generally recognized (Drucker & Goldstein, 2007; Felsenstein, 1996; Keane & Allison, 1999):

- Multiplier effects, due to the purchasing power of the institution, its staff and students
- Knowledge distribution, due to patents, applied research, consultancy, spin-offs and alumni

My attention is focused at the third field, which until now received least attention. Agreement prevails that the regional embeddedness of HEI is far from optimal (Rose & Rose, 1969). Morgan refers at “cathedrals in the desert” (Morgan, 2007). Most HEI deliberately choose to give way regional to international connectivity. A broad comparative analysis of 14 HEI demonstrates the existence of large global differences in the regional involvement of HEI (Goddard, 1997). Particularly, the ideological dominance of the Humboldt University, keeps West European universities from involvement in regional development and societal engagement in general. However, due to more pluralistic views at the essence of HEI, lack of money and governmental pressing major changes are underway (Barden, 1995; Castells, 1996; Cornuel, 2005; Glasson, 2003; Harloe & Perry, 2004; Innovatieplatform, 2008; Wetenschappelijke Raad voor het Regeringsbeleid, 2008).

The research project ‘Improving the role of HEI in learning clusters’ will answer five questions
1. There will be a resume of the body of knowledge regarding the regional effects of HEI policy. This body of knowledge will be integrated in the current discussion between evolutionary approaches with regard to (regional) growth that focus at decision-making and macro approaches that focus at (regional) development and innovation processes.
2. The project will uncover empirically which interactions between specific HEI policy measures and specific activities at inter-organizational level favour (on hinder) learning activities that contribute to regional development and innovation.
3. The project will increase insight in the realized versus potential impact on regional development and innovation of a few selected HEI, just to reveal the urgency of improving the involvement of HEI in learning clusters.
4. The project will formulate related policy measures sat the level of university administrators, the management of organizations and local and regional government, given the undisputed view that only co-operation will enhance the fabric of learning clusters and consequently result in regional development and innovation.
5. Finally the project will define a strategy for the Open University to support processes of organizational learning in general in order to strengthen the Open Universities’ mission as University for Life Long Learning.

The paper will elaborate these questions and the appropriate research methods in depth

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Abstract: This paper seeks to study individual learning in organizations. The aim is to investigate the learning processes of operational activities in the workplace. A qualitative methodology was chosen due to the nature of the research, which focused on a description and an understanding of this learning and the development of a specific group of workers. The focus of this paper is centered on the roles of experience and reflection, considered fundamental to the understanding of the learning process. To understand the learning process we observed the workplace, analyzed documents related to the company’s adopted strategy, and conducted interviews with fifteen employees of a specific production area in a chemical company. The results of our research indicate that the learning process occurs due to the presence of drivers of learning, the interaction between new workers and their instructors, the workers’ environment, their social worlds, and the participation of these workers in the process of sharing experiences, information and knowledge in the production area.

Introduction

This article, as mentioned in the title, seeks to understand how the worker learning process is handled in the chemical industry in the industrial segment, and focuses specifically on the activities that contribute to the development of these workers up to and including the supervisory level. The fieldwork for this paper is based on the extruded product manufacturing area, which is primarily focused on the making of edgeband for the furniture market and industrial profiles in general.

The studies which cover the learning of adult individuals (Knowles, 1980, 1990, 2005), workplace learning (Illeris, 2003, 2004, 2007), and the nature of experience (Kolb, 1984), served as an inspiration for the analysis of our results. Further support for our analysis was sought from Schön (2007) who focuses on knowing-in-action and reflection-in-action studies and the importance of this reflection in professional practice, and finally in Elkjaer (2001, 2004, 2008) in order to understand how these processes can be analyzed in terms of a social theory of organizational learning.

The emphasis on these authors is justified by their focus on work, centered on the roles of experience and reflection, considered fundamental to the understanding of the learning process. According to the theory of social learning proposed by Elkjaer (2001, p. 113):

Experience doesn’t come merely from an activity, just doing it, and isn’t based on any change that implies reflection about previous actions with the goal of anticipating future consequences. Simple participation in practice, in action, doesn’t lead to learning. People are learning only when they are capable of reflecting about their actions and reorganizing their thoughts, like reconstructing an experience through a process of continual reflection.

It seeks to answer the following research question: how to handle the learning process for operational activities and which factors contribute to the development of workers in these activities? It was decided that the general objective should be to analyze the learning process and the career paths of a group of employees who work in the production area of a chemical company. Specific objectives were defined as follows: (a) Describe the process of professional training adopted by the company from the workers’ entry in the company until their promotion; (b) Understand how learning occurs from the point of view of the individuals who pass through this process and (c) Identify the learning experiences in the production area that contributed to these individuals’ professional growth.

The article here presented as a result of this investigative effort is organized into five sections. The next section identifies the authors who contributed to the elaboration of this theoretical framework. Next section 3 covers
The methodology used in the field research, and contains a brief description of the company where the study was conducted. In section 4, the results are presented and analyzed in light of the authors whose work makes up this article’s theoretical base. In our final conclusions, we finish the work by presenting the principal factors which facilitate and make possible the workers’ learning and development in the examined activity.

**Theoretical Framework**

**Learning in Adult Individuals**

In talking about learning in adult individuals, Oliveira (2004, p. 217) states that:

> The adult’s position in the working world and interpersonal relations is different from a child or a youth. The adult carries a longer history (and probably a more complex one) of experience, accumulated knowledge and reflections about the outside world, about himself or herself and about other people. When adults find themselves in learning situations, the characteristics of being in a different phase of life gives adults different abilities and difficulties (compared to a child), and probably greater capacity to reflect about their knowledge and their own learning processes.

Adults with their experiences, traumas, difficulties and abilities are the principal figures in this work. Their learning processes, given the adult’s place in the working environment and the social roles that they are constantly required to play, cannot be the same as that of a child or adolescent. The strategies of their education and development need to be different. To discuss this learning, we follow the assumptions made by Knowles and Illeris in their studies of adult learning and workplace training respectively.

Valuing experience and a readiness to learn on the part of the apprentice are of fundamental importance to Knowles (1980), because it is through these characteristics that the learning process takes shape and evolves. Experience plays such a large role that according to the author adults are what they’ve gained through the experiences in their lives. To Knowles (1980), adults enter any undertaking with the various experiences that originated in their childhood. Having lived more, they have accumulated more experiences from which they derive their self-identity.

According to Illeris (2003, p. 172), “the central fact in relation to adult learning is that adults, in contrast to children, are no longer minors, and are capable of taking and are willing to take responsibility for their behavior, actions and opinions and thus also their learning.” He makes it clear that adults are skeptical of what other people want them to learn and that they do not feel the necessity or urgency of learning. Adults – consciously or unconsciously – decide for themselves, and for this reason, in relation to their learning, it’s necessary to pay attention to a few points that the author makes:

- Adults learn what they want to learn and what is meaningful for them to learn;
- Adults draw on the resources they already have in their learning;
- Adults take as much responsibility for their learning as they want to take (if they are allowed) (Illeris, 2002, p.219);
- It is equally important to acknowledge that adults are not very inclined to learn something in which they are not interested, or in which they cannot see the meaning or importance. At any rate, typically they only learn partially, in a distorted way or with a lack of motivation that makes what is learned extremely vulnerable to oblivion or application in situations which are not subjectively related to the learning context.

In Illeris’s conception (2004) this interest can be related to momentary and superficial needs, curiosity and provocative questions which the adult feels need to be answered. However, beyond these immediate needs, adults can have stable long term projects which frequently are tied to family, career, financial, or leisure issues that are in any event related to the person’s life, history and individual makeup.

To Illeris (2004), workplace training is based on the relationship between the training environment and the individual learning processes of the employees. He attributes great importance to the dynamics between the apprentice employees, the professional community and the creation of an organizational technical system that is appropriate to the material to be assimilated. In the workplace, individuals are exposed to practices and identities which they need to incorporate and which make the learning and development processes possible. Illeris (2004) views individual learning and social learning in the workplace as being linked by a dialectic that takes place between them. On the individual level as on the social level it is necessary to establish a relationship between the content of
the individual learning and the organizational/technical environment, and between the learning dynamic and the social and cultural environment in which these processes take place.

Based on the studies of Furth (1987), Illeris (2007) states that the learning process is made up of three dimensions: cognition, emotion and society. Cognition is associated with knowledge, understanding, abilities, technical evaluations, attitudes and wants, while emotion is associated with sentiments, motivations, and desires, and the social dimension is tied to interaction, communication and cooperation. The interaction between the author’s three dimensions constitutes the experiential learning process.

Experiential Learning and the Reflection Process
The concept of experiential learning put forth by Kolb (1984) proposes that learning involves a transformation of the experience into knowledge which results from the transaction between personal and social knowledge. His theory is based on a cycle of four “moments”: the concrete experience, reflective observation, followed by abstraction, active experimentation, and then returning again to concrete experience with a new experience. Experience and reflection are of fundamental importance to the idea of experiential learning as proposed by Kolb (1984). Experiences and their consequent reflections stimulate further learning processes.

Complementing Kolb (1984), who emphasizes the role of reflection in the learning and training processes, Schön (2007) emphasizes the importance of skills and talents to professional performance. Schön (2007) uses the expression knowing-in-action to refer to the types of knowledge that emerge from intelligent actions, which to him translate into physical performances that are publicly observable, such as riding a bicycle or the instant analysis required in riding a swing, activities in which knowledge is found in the action taken. You can know how to ride a bicycle theoretically, yet you only ride a bicycle in practice. For Schön (2007, p. 33), knowing-in-action “is a process in which you are placed spontaneously without conscious deliberation and which work, and give the intended results, when the situation is within the limits which we have learned to consider normal.”

Reflection according to Schön (2007, p. 33), “is at least to some extent conscious, even though it doesn’t have to be expressed verbally”, because in situations in which the individual is not able to resolve the problem through knowing-in-action, this knowing, together with unexpected events, is taken into consideration in the search for an understanding of these phenomena and the learning process. From this process emerges reflection-in-action, a situation in which the premises adopted in the act of knowing-in-action are questioned. Processes are analyzed in a more critical manner and new strategies of action arise, as well as a new comprehension of these phenomena and how to view these problems.

Learning to do something by oneself, according to Schön (2007), has the advantage of a liberty in experimentation without the limits established by the views of others, however it also has the disadvantage of reinventing the wheel without taking advantage of the knowledge and experience of others. However, in the reality of the workplace environment, there is a need for good and rapid results, good performance and a minimum of errors which don’t allow the apprentice to reinvent the wheel. In these contexts, more experienced professionals wait for apprentices to develop basic skills which will need to be honed during the learning process.

Learning in practice, according to Schön (2007), occurs in two distinct contexts, in familiar and unfamiliar situations, and under two different standards of approval for the knowledge learned in each of these contexts. For this article our chosen perspective is the epistemology of practice and reflection-in-action.

Learning through Experience and the Social World
The interactions between individuals, the exchange of experiences, social interaction and the environment where these processes take place serve as raw material to stimulate new learning. This new learning, however, is essentially tied to social contacts and the exchange of experiences between more experienced professionals and apprentices. This learning will not occur if individuals do not interact with social worlds which they modify and transform and through these actions and are in turn transformed. This is a dialectic in which individuals transform the world and as a consequence are transformed themselves.

Based on Dewey (1936) Elkjaer understands learning to be essentially related to the change that comes from life experience. According to Elkjaer (2008), Dewey emphasizes the experiential nature of the concept of experience and its relation to reason, emotion and the organization of the future. To the author, experiences are the result of the relationships that individuals establish with nature and with their social context. Elkjaer (2008) considers the work of John Dewey to be very important to the definition of a concept of learning in which it is possible to perceive that the acquiring of knowledge only comes through individuals being put in positions of uncertainty, having to use their experience and the reflective thought defined by the author. This definition, according to the author, gives an idea of how learning occurs, and thus in order to use this for organizational studies, one must have an elaboration of the concept of how to understand work and organizational contexts.
To demonstrate the importance that the concepts studied by Dewey hold for organizational studies, Elkjaer looks to the work of the sociologist Anselm Strauss. According to the author, Strauss understands the workplace as part of the social world, which is based on its members agreeing to accepted practice in two senses, that of needing to do something and that of wanting to do something. Strauss (2006, p.89) defines the concept of the social world as:

The idea of a symbolic environment implies that all humans live in what we can term a social world. These worlds can be thought of as groups of individuals who are joined together by communication networks – whether the members are geographically close to each other or not – and by shared symbols.

Strauss’s theory (apud Elkjaer, 2008, p. 12) about organization and the workplace is focused on action and interaction as a continuous process. The author understands the workplace as an arena made up of social worlds. This understanding serves as his point of departure for understanding work and the workplace as the fruit of collective and coordinated actions. To understand the workplace as an arena is related to the fact that the borders that divide and limit them are open to other social worlds. The workplace doesn’t have walls that determine that this is a place for organizational activities. This delineation is established by workers agreeing to collective actions and the rules of the game.

According to Elkjaer and Huysmann (2008), the social world is related to collective actions and the forms of interaction based on the member’s acceptance of the conditions in which these commitments are fulfilled. The social world serves as the foundation for organizational activity, for collective action and as the unit of analysis for studies of the workplace and organizations.

According to Elkjaer (2004), the idea that learning has a double relationship with social worlds as the result of grouping together diverse people with diverse individual characteristics, different types of people with different abilities, values and ideas is an attempt to recognize that there are differences between social groups that make up an organization. These differences need to be taken into consideration at the moment the research is conducted as well as in the genesis of organizational learning, because the commitments undertaken and the interactions between individuals and groups in the organization are influenced by the characteristics of their members.

**Study Methodology and the Study Location**

For this study we used a qualitative methodology. This study can be characterized as a case study (Godoy, 2006, p. 121) and the data was collected based on observations of the workplace, an analysis of documents (pertinent to internal employee training, and the organizational rules and procedures related to training and development), and fifteen interviews with the extrusion foreman, shift supervisors and workers in the production area. The interviews were conducted to understand how learning occurs from the point of view of the individuals who go through the process described in the company norms, manuals and procedures and to identify learning experiences in the production area that possibly contributed to the career path of individuals up to the point where they reached the supervisory level. The analysis of the data was based on the procedures of the interpretive textual analysis proposed by Gil Flores (1994) and templates as used by King (2004).

The company where this research was conducted is part of the industrial segment and belongs to the rubber and plastic product industry. The company is a German multinational firm with installations in the city of Cotia in the Western region of Greater São Paulo which has approximately 180 employees.

The training processes for new workers are run by the German central office and are made up of a gamut of subjects which should be covered in the integration and training of new workers. There is a coordinator specifically dedicated to the extrusion sector responsible for the specific training which will incorporate all the necessary general subjects. This professional should elaborate a training plan for each operational level of the department and ensure that all the workers are properly trained during their apprenticeship and throughout their professional career.

**The Learning Process and the Worker Career Path**

In this section we present our results and our analyses and the interpretations we have made based on our theoretical framework.
The Path Traveled by the Study Participants

The professional development of fourteen of the participants began with their being hired as production assistants. The activities developed in this work post are related to the end of the fabrication process, when the rolls of edge tape are tagged and boxed.

The process of learning the factory activities begins on the first day of work. Initially new apprentices are presented to the other workers in the production department and they are shown the fabrication process, the machine room, and the type of material that is produced. Then these workers go through basic safety training and begin the integration and training process at their workposts. The learning of the operational activities occurs through these individuals’ contact with the fabrication process and their interaction with more experienced workers.

The participants spoke about their learning experiences and talked about the exchange of knowledge in the factory environment. The Participant Foreman shared his learning experience:

I learned with the young guy who taught me, I don’t know his name, he explained to me how I had to do the cleaning, that there were various types of material. That I had to know the qualities of each material, what PP is, what ABS is, what PVC is. He taught us all of this and we learned the codes of the material and everything. [...] I had to be very dedicated to the work that I was doing.

It’s possible to perceive from the way the foreman speaks, that there’s a preoccupation with teaching the types of materials used, the codes used to register production activities and an emphasis on the importance of being “very dedicated” in performing these activities.

For Participant Worker-1, the beginning was marked by the feeling that the processes were very difficult because of the quantity of information involved in the performance of these activities, however he tells us that he was lucky to begin with an operator who not only explained everything “very well”, but was also very patient with him and showed him how it should be done:

Look, at the beginning, everything is explained; everything was explained correctly like how you package and arrange everything. In the beginning it’s very difficult because it’s a lot of information, but I was lucky in terms of whom I began working with. He explained things well; he was patient with me. He taught me everything correctly; it was good. First he showed me just the basics, he didn’t explain everything. He explained the basics like: “Pay attention to what I’m doing. I’ll explain it to you, but watch what I’m doing, because later you’re the one who’s going to do this.” But he just showed me the minimum so I could learn. He did it and I watched. It would be like this, he’d explain.

It’s possible to perceive from the participants’ statements that the learning process, the interactions and the relationships established in the factory environment haven’t changed much over the years. Analyzing the statements of the Participant Foreman and Participant Worker-1, the former with twenty five years of experience with the company and the latter with one year and four months, we note that the learning always begins through contact with more experienced professionals who are responsible for teaching the new workers. This method of teaching is derived from the extrusion department’s concrete daily practices; learning in this context is understood as the fruit of the integration of the new participants with the more experienced participants and the exchange of information through daily work situations (Elkjaer, 2004).

The professional development of the participants up to the point at which they find themselves today follows a path that begins with the learning of day to day factory activities by the constant exchange of knowledge and information acquired through practice at work and the sharing of information among the workers. The errors committed during the development process appear to be an important source of learning; they help the apprentice learn the difference between a task done correctly and well and a task performed that does not meet the standards of the extrusion department. The attitude of the more experienced operators when errors are made appears, through interviews, to be oriented towards seeking to make this error an important moment and a teaching tool to illustrate the way things should be done.

Individual learning experiences are put at the disposal of not just the company but also less experienced professionals, those who are still in the process of learning this operational activity. The interaction and exchange of information and knowledge permeates the whole process of operator development.
The Role and Postures of Apprentices

It is clear to apprentices which postures they should adopt so that their learning will take place properly so that they can move on to the following posts and so that their operational functions can be carried out.

For Participant Worker-2, what is important is:

I think it’s to want to do things. I am curious in this way, sometimes I know that there’s something in the area I’m in, in this sector here, there’s someone doing something with the machine by my side that I’ve never done and I can go there and see what it’s like. This person is generally a more skilled person, or in other words this task is more difficult. [...] If I’m there, I’ll ask: “And this thing here, how is this thing here done?” And so, as he’s doing it, sometimes if I can follow what he’s doing, then I will follow what he’s doing. And this is going to help me to grow. I’m doing some product, and you’re doing something more difficult, so that if one day I have to do that, I already know more or less how to do it.

The question of curiosity and following the work of more experienced professionals, as a way to anticipate and facilitate future learning, is evident in what Participant Worker-2 says.

For the Participant Foreman, the will, interest and the search for “improvement” in the activity are essential factors, without which functional development will not be possible:

Ah, I think you can do anything if you want to. If the person has the will and the interest, then you can succeed. Because you also can’t stop and wait for things to fall into your lap. You always have to be looking to improve, and when you improve you grow and then people will notice that you have the ability to do this, understand?

The learning processes and the consequent development of operators in the sector examined are predicated on a solid foundation, which combines a constant observation and orientation of the operators in their growth process within the company hierarchy, and a constant exchange of information and a preparation of the abilities necessary so that new functions can be performed in the future.

Workers, to a large extent, become responsible for their own learning, and they need to have the attitude and interest to put themselves into new situations and thus guarantee success in daily work activities and functional development. This responsibility goes back to the fundamentals of andragogy proposed by Knowles (1980). Apprentices need to mature in the sense of seeking their own paths, seeking to learn and adopt attitudes that further learning, and along with seeking their own personal growth, they need to seek the growth of co-workers as well. The readiness to learn is also pointed out by the author as being fundamental to improvement in the function to be mastered, because as we can tell from the interviews in this section, the information doesn’t come to individuals if they don’t look for it, and have a desire to learn and help the organization grow.

The relationships described in the statements presented in this section also point to the characteristics that Knowles (1980) describes as being crucial in order for learning to occur. To him, the individual’s self-image goes from being that of a dependent personality to a self-driven, self-developing personality, with accumulated experience that will provide an important resource for future learning. These characteristics are present and permeate the statements made by the participants in their constant preoccupation with being proactive, searching to collaborate and exchange information necessary to their learning, being ready, curious, patient, and aware of their environment and constantly focused on the perfecting of their activities.

The importance of, and the central role of, experience is a constant theme in the participants’ statements. The value of vivid experiences and the way in which individuals access and transform the information accumulated during their learning is that it feeds the cycle of experiential learning proposed by Kolb (1984) because concrete, vivid lessons are transformed into reflections and concepts, which will be experimented with and re-experimented with in new concrete experiences and new development.

Also, based on an analysis of the interviews, it is possible to perceive that knowledge and learning are shared through facts, rules and procedures which are adopted and applied in day to day factory activity. The more experienced professionals communicate and demonstrate the application of rules and procedures to their apprentices in their work activities, which characterizes the definition of technical training adopted by Schön (2007). Thus workers’ abilities are not restricted to technical training, because when the more experienced worker asks that apprentices execute learned tasks, the request is also an opportunity to demonstrate accumulated learning. In these situations, they are giving an opportunity for their pupils to think like experienced operators who use all the accumulated experience and information learned to demonstrate their development and learning. The more
experienced operator is giving the apprentice the opportunity that Schön (2007) calls the capacity to “think like an...”.

The “think like an...” operator appears when workers are put in practical situations where their knowledge and accumulated experience need to be used to do the work assigned.

The Role Played by Experienced Professionals
Training is governed by company strategies and the more experienced operators. The company is responsible for offering obligatory theoretical training to all workers in the production sector and for providing qualified, experienced operators with practical training at work. The new workers when they enter an organization go through a period of intensive training by an operator who is responsible for the training at that particular workpost.

Participant Operator-2 talks of the importance of verifying the profile of the apprentice and the possible ways in which the apprentice will behave during the process to evaluate this person’s capacity to anticipate possible situations that can come up during production:

So in the sector it’s like this, you have to think quickly, do things quickly and this way everything flows smoothly. So someone that’s very relaxed and peaceful, while that person’s thinking what to do, it’s already happening, understand?

If you just think: “Hey, I think the roller’s going to stop.” When you look, the roller already stopped a while ago. So before you look, before the time comes, you look there, at the number there, at the length that’s there, so that you’re sure that it’ll last for a while: “I think it’ll last long enough.” So it begins like this, I would have a little conversation with them, looking, you understand, I’d say: “You’re arriving now, the rhythm that I’m used to working at is this.” I always said good things to him. I don’t have a lot, all that, I don’t know, it’s not that I didn’t like him, that I didn’t want to pass him, that I’d like it if he didn’t pass.

The operator is obviously preoccupied with teaching material related to which steps should be taken, the sequence of events that should be followed in manufacture, the verification of materials used, the establishment of priorities and the adoption of strategies that enable work to be done in a fluid and efficient manner.

The experienced worker also plays a role in advising apprentices of the way in which they should conduct themselves in the production environment and to make the apprentices conscious of which part of the learning is their responsibility when giving a rough idea of the diverse situations that come up day to day.

Participant Operator-1 also shared his teaching strategies:

When I was a PD1, I was always training people when they were entering the company, then they stayed with me, while I was using the machine. So the foreman went there and said something like this: “-Hey, this one’s going to work with you.” He presented the person and then said: “-Explain everything to him there.” And when I was in this position there, I taught the kid the maximum possible, taught whoever was there, I taught him and said something like this: “-Hey, my friend. If you want to learn, you have to ask mate. Anything I can answer, I’ll answer mate. Now guy, what I can’t answer, my superior will answer. You can’t leave with any doubts.” Can’t leave here, arrive home and say: “-How did that guy do that and I didn’t manage to?” Or: “-I wanted him to do it that way and he didn’t.”, “-So anything you have any doubts about, you ask. Ask, because if I can’t resolve the question, my superior will answer it. He has to resolve it, or else he’ll have to find the information for you.”

It’s also possible to perceive in Participant Operator-1’s statement that the apprentice’s interest in the learning process is fundamental. For him to ask and search for answers from the most experienced employees is giving extreme importance to the development of the teacher as well as the student. According to him, doubts should always be cleared up and an error should be handled by working together find a solution.

One can perceive from the statements of the more experienced participants that they search for ways for the apprentices to learn. To them, teaching everything that they know about the processes and the attitudes that should be taken in the production area represents a way to help new employees develop. Attitudes include hints and ways to behave in front of other professionals and their bosses. For experienced professionals, the enthusiasm exhibited by the apprentices is a determining factor in motivating them to continue teaching and dedicating themselves to continue contributing to the learning of these employees.
The Shift Supervisor’s Role

The shift supervisors describe the importance of their role in the learning process of new workers.

Participant Supervisor-1 tells us that:

Ah, my role is, for people that are entering as new workers it’s an important role, because it gives them a reference. It’s like it was for me, when I entered the company. When I tried to improve, I had to go to [Supervisor-2], to “Smith”, “Jones”, the foreman. So we have to have someone to talk to, to get to where we want to go. So, let’s suppose, that person has been here longer, has more knowledge, so you have to get to the level of that person.

Participant Supervisor-2 talking about the process of assimilating new workers shares with us that:

So I think it should be like this, I sort of leave the guy alone, the first week I leave him with the operator, of course, I always leave him with someone. I’m not going to say to him: “Ah, stay with this assistant here who doesn’t know anything either.” That would be unfair. I look at his reaction. When I look at the way the guy works and say: “-No, this guy makes an effort. I look, and the guy’s always busy, the guy always wants to do something.” Then I say: “-No. Now I’ll go to him to put a little more pressure on him to see his reaction.” But when I see that the guy doesn’t want it...I switch and I say: “-So, let’s go there?” Because sometimes the person that I put to teach him, he’s not teaching him what he should be teaching him. I say... He’s entered, and I say something like this: “-Look the guy’s going to teach you how to do this, he’s going to stay more with you and explain to you what you have to do with the machine.”. When I see that the guy isn’t doing it, I tell him that I expect more and say: “-Look, my friend, you have to teach more to this guy. You have to.” Sometimes the experienced employee comes and says: “-My friend, this guy doesn’t want to learn.” Then I take him out and put someone else in to teach the guy. To have another opinion. The reality is that they know more than I do, I don’t stay by the machine like they do non-stop.

It’s interesting to note that apprentices, when they confront problems during the learning process, are given the opportunity to demonstrate that the problems could be related to the way the subject’s being taught by the experienced professionals and not by a possible difficulty in learning the material. From Participant Supervisor-2’s statement, it’s possible to note that new opportunities are offered to the apprentice and that the opinion of other experienced operators is taken into consideration when it comes time to decide whether the apprentice will continue this activity or not. The failure in a learning situation is not initially attributed to the apprentice; it’s much more associated with the teaching strategies adopted by the more experienced professionals. Thus apprentices are given a new chance to show that they have the desire to dedicate themselves to learning the activities.

It can be perceived through the statements of those who are operationally responsible in the extrusion area that the development of new workers is followed very closely, even to the extent of verifying if the more experienced operators are really teaching and facilitating the learning process for the newer operators. It’s also possible to see that the learning closely follows a perspective that Elkjaer (2004) terms a third way of learning within organizations, because individual experiences are taken into consideration along with investigative thoughts and reflections, given that the individual is considered as a whole which also includes emotions and intuition. These verifications are present in the reflections of the professionals responsible for the workers. Their preoccupation can be perceived by their considering the fact that an individual may not adapt to the type of teaching that their colleagues are using or that even in certain situations, it’s better to let the apprentices reflect because many times in the learning process they may be nervous and may commit errors because of this nervousness which in moments of calm they would not commit.

A constant preoccupation with the learning of assistants also goes back to the issues pointed out by Knowles (1980) in terms of what they say about the creation of an environment favorable to adult learning, the constant evaluation, following the progress of the learning, and the valuing of individual experience. The workers understand the importance of their work and understand that their day to day involvement will determine the success or failure of their learning process and professional growth.

The on the job training described in the participants’ statements is closely related to the issues that Schön (2007) describes as those that make up knowing-in-action and technical training, because the more experienced operators responsible for the training teach based on their practical knowledge, which to a certain extent has a very
close relationship to their tacit knowledge (Nonaka & Takeuchi, 1997). In addition to tacit knowledge, the rules and procedures adopted in the workplace are also taught.

Reflection-in-action (Schön, 2007) also plays a part in the training process, because besides teaching the daily activity, the more experienced operator needs to select which knowledge and which strategies will be taught to the new workers. When the form of teaching and the best strategies are selected, the operators need to make a distinction between their way of working, many times permeated by their own strategies and ways of resolving problems, and the ways described in the machine operating manuals.

Starting with knowing-in-action, the new workers will develop their reflections to the extent that they progress in doing their work and will develop their own learning and improvement strategies by their constant reflection-in activity and by action (Schön, 2007). To the extent that workers becomes specialized at their workposts, activities will become routines that belong to tacit knowledge, and based on this knowledge the worker will come to foresee and solve problems before they occur, will come to formulate mental schemes that permit the rapid resolution of problems that emerge, and will come to act in a preventive and proactive manner.

Conclusions
Experience is, to the authors chosen as the theoretical references for this work, a fundamental factor in the learning process, because it can be considered the principal driver behind the acquiring of new knowledge and career development.

Yet while this field research was conducted, it was possible to identify other factors that help to transform accumulated experience into new knowledge and new experiences. These factors include curiosity, interest, will and the apprentice’s effort and are understood in this work to be drivers of new knowledge and professional growth. These factors are cited in the statements of most of the participants as the raw material which makes learning and professional growth possible. They are associated with the daily activities and the postures adopted by the participants while teaching as well as learning. To them it is necessary to be curious and attentive to new situations, to problems that emerge and department routines. The apprentice needs to be ready to learn, and the company has the task of giving the workers strategies that will allow them to continue to develop. The drivers cited above are always mentioned by the participants when asked to describe how they learned their activities.

A readiness to learn is pointed out by Knowles (1980, 1990, 2005) as a factor that arises the moment that people feel the need to learn in order to deal in a more satisfactory manner with the activities and tasks of the real world. Also the role of learning is seen as a development process that contributes to workers attaining their maximum potential in a given activity, since a desire to be able to apply their acquired knowledge and abilities is seen as a way to perform more effectively in the processes in which they are involved.

Illeris (2003) also notes that adults are not inclined to submit themselves to training which is not of interest or significance to them, or does not have importance to them based on their criteria. When the participants mention the issues of interest and curiosity, they corroborate the presuppositions made by Knowles (1980, 1990, 2005) and by Illeris (2003).

The research participants find themselves in a factory environment in which interactions are established, not only in terms of production activity but also coexisting with individuals of different origins, different visions of the world, and different interests in relation to the activities performed. The environment constitutes what Strauss (2006) terms the individuals’ social worlds. To him, the social world is related to collective actions, the way in which interactions occur based on the commitment of the participants, and the conditions in which the commitments are carried out.

To Elkjaer (2001, 2004) learning is only possible based on the relationship between individuals and the organizations of which they are members. Individuals learn based on their reflective thought, from investigations, from their emotions and intuition and through their relationships with the other members of the social worlds to which they pertain in the workplace.

References

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Teachers as Pedagogic Entrepreneurs: A Special Case Study Applied to Teaching Biotechnology Management in a French Business School

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(A much longer and more extensive version of the paper is available upon request.)

Abstract: This theoretical article compares the process of educational innovation implemented in the Champagne graduate school of management with the Austrian theory of entrepreneurship and raises the question: “Is the teacher a pedagogic entrepreneur?” Building a program of biotechnology management is a challenge in the French context. Issues regarding refractory social representations and inappropriate pedagogic approach based on TCM must be overcome to produce managerial profiles able to meet the biotechnology market needs. On the basis of the Development Centered Paradigm, a new teaching model was then implemented. In this case study, we demonstrate that DCP requires teachers to act as pedagogic entrepreneurs. Alertness, discovery and creativity are the prerequisites necessary to seize cognitive profit opportunities that will help to promote the expected changes in students’ subjectivity. Furthermore, this theoretical comparison reveals that DCP is a paradigm of entrepreneurial nature. Moreover, its implementation enhances the development of students’ entrepreneurial abilities.

Introduction
The French business schools are among the educational institutions with the closest proximity to companies. But in a global context characterized by the expansion and increasing complexity of markets, whose development is based on knowledge (information technology, biotechnology, nanotechnology, etc.), new requirements in terms of skills and knowledge arise. For graduate schools of management, this new demand is a duty in that they must meet the expectations of professionals. However, few teachers in these schools have the suitable profile, experiences, and skills necessary to develop such a program. Nonetheless, in the Champagne graduate school of management, a teacher has perceived, while scrutinizing the biotechnology market, the profitability of the implementation of such training for this sector. He discovered it was beneficial to train students with a dual competencies profile in management and biotechnology. This discovery has been fundamentally entrepreneurial in nature.

The Austrian school of Economics, initiated by Menger (1994) and developed throughout the 20th century by emblematic figures like Mises and Hayek, has made the entrepreneur a central concept of this approach. The entrepreneur, in a market context, is considered as a promoter (Mises, 1985) whose role is to discover and to seize hitherto unnoticed profit opportunities. Mobilizing his/her alertness (Kirzner, 1978, 1992, 2000) and being creative (Shackle, 1972, Harper 1994), the entrepreneur is described as being both an initiator of change and a dynamic force on the market in promoting a better coordination of individual plans. On this basis, the teacher of the Champagne graduate school of management acted as a promoter on the biotechnology market by discovering this training opportunity of dual competencies profiles. However, the French context shows an idiosyncrasy insofar as refractory social representations are expressed against some biotechnologies (e.g., GMOs). The construction of programs adapted to the opportunity discovered on the market is therefore made difficult. Indeed, the dominant approach in the French pedagogy — the Teacher Centered Model (TCM) — does not favor the consideration of students’ preconceptions, i.e., their representations. This approach may therefore lead to a student rejection of the content of teaching. This pitfall has led the teacher to examine different pedagogical models in order to identify one that might be likely to eventually help him to overcome his difficulties. Scrutinizing the educational models’ market, he discovered the Development Centered Paradigm - DCP (McCuddy & Reeb-Gruber, 2008), whose starting point is based on the interests, talents and curiosities students bring to the learning environment. This model, more able to integrate the identified issues, seemed to him more appropriate. The teacher has since taken up the challenge to develop a course based on this new paradigm.

The DCP is a new concept with no previous application in the field of the management of biotechnology. That is why the teacher had to devise the components of his program, i.e., he had to discover his program as defined by the Austrian theory of entrepreneurship. The implementation of the program he has built allowed him to test his
pedagogic innovation. The results show that students challenge their own social representations (Parisot & Rossi, 2008b). The discovery of this phenomenon led the teacher to examine the entrepreneurial nature of the pedagogical model (DCP), which informs his program. The DCP would then be consistent with an entrepreneurial alertness similar to that theorized by the Austrian theory of entrepreneurship. This sequence of discoveries made by the teacher gives him the status of an entrepreneur in the Austrian theoretical framework.

A comparison of the implementation process of this pedagogic innovation with the Austrian theory of entrepreneurship is examined in order to demonstrate the entrepreneurial nature of the approach of the teacher. The presentation of the theoretical framework recalls the key steps of the entrepreneurial action according to the Austrian approach and facilitates the comparative analysis that follows. Because the nature of the pedagogical model influences its implementation process, the object and the creation process of the DCP were also analyzed according to an Austrian perspective. It appears that the starting point, the functioning, and the objectives of this new paradigm have strong similarities with the stages of the entrepreneurial process in the Austrian approach. Moreover, the path followed by the teachers who designed the DCP is also in line with an entrepreneurial approach.

**Theoretical Framework**

The theoretical conceptualization of the entrepreneur is not only polysemous—which a priori prohibits finding a unified design—but it also remains strangely absent from the two main competing economic orthodoxies of the 20th century (Neoclassical and Keynesian theories). So that some economists do not hesitate to assert that the figure of the entrepreneur seems nowhere to be found in economic theorizing (Herbert & Link, 1988). Such an assertion seems excessive. Indeed, it is possible to summarize the key figures of the economic theory of the entrepreneur in five a priori divergent approaches regarding the purpose or functions of entrepreneurial activity: (a) the entrepreneur conceived as a resource manager, i.e., the centerpiece of production and distribution (Say, 1803); (b) the entrepreneur viewed as a risk-taker, a characteristic of individuals whose preference for risk leads them to accept the occurrence of costs in case of failure (Knight, 1921); (c) the innovative entrepreneur assimilated to a leader, able to create new combinations of resources to break the routines (Schumpeter, 1999); (d) the entrepreneur as a manager of inefficiencies, i.e., an individual able to coordinate at lower costs several different activities within different markets (Liebenstein, 1968); and (e) the entrepreneur proceeding to arbitrage, i.e., the Austrian conception of an individual benefiting from price differentials (Mises, 1985, Kirzner, 1978, 1985, 1989, 1992, 2000). However, among these competing theories, it seems possible to mobilize the Austrian theory of entrepreneurship (Mises and Kirzner) as the unifying principle of these competing visions. Indeed, such a theory provides a central place to alertness, to creativity and is based on an original learning process making the discovery of profit opportunities hitherto ignored the suitable medium through which it seems possible to reduce the radical ignorance that typifies human environments—all of which can pose questions for researchers in pedagogy and in education sciences.

In a broad sense, entrepreneurship refers to the concept of human action (Mises, 1985). If one assumes that human beings are in a state of perpetual dissatisfaction, of 'un-quietude' (Mises, 1985; Aimar, 2005), it follows that individuals can be characterized by a fundamental inability to be content with allocations of resources available to them. They are driven by a permanent and unwavering determination to change things, to achieve the goals they set—the achievement of those objectives is supposed to bring them a higher satisfaction level. However, by nature, the action falls within real time, which in itself entails constant change, uncertainty, and irreversibility (O’Driscoll & Rizzo, 1985). Therefore, any undertaken action may be affected by changes in data (resources, information, etc.) that occur continuously in the environment within which it is exercised. Accordingly, following Mises (1985, p. 267), it appears that the entrepreneur shall designate an “acting man exclusively seen from the aspect of the uncertainty inherent in every action. In using this term one must never forget that every action is embedded in the flux of time and therefore involves a speculation.” Thus, entrepreneurship is, according to this approach, a general feature of human action (Mises, 1985, p. 267); a feature that can be summarized as the tendency of every human being, confronted with environments characterized by uncertainty and radical ignorance, to want to permanently remove and correct errors within his/her environment—errors which are all inconveniences in the relentless pursuit of gains in satisfaction.

Huerta de Soto (2008, p. 16) points out that, following this approach, every human being who acts in order to change his/her current state and to achieve his/her future goals is exercising entrepreneurship (1). Such a broad definition of the entrepreneur is problematic because of the difficulty incurred in discriminating between different categories of agents (capitalists, landowners, workers, etc., cf. Mises 1985, pp. 267-269). This is why Mises (1985, p. 269) proposes to substitute the term “promoter” to the concept of entrepreneur; the promoters are “those who are especially eager to profit from adjusting production to the expected changes in conditions, those who have more initiative, more venturesomeness, and a quicker eye than the crowd, the pushing and promoting pioneers of
Alertness is akin to knowledge of a particular type; it means “the ‘knowledge’ of where to find market data” (Kirzner, 1978, p. 67). This alertness is not a choice (3) but an individual ability, an idiosyncratic and tacit knowledge (Polanyi, 1951, 1958, 1966) which gives a singular character to the entrepreneur; it is a spontaneous feature reflecting, from the point of view of the entrepreneur, his/her ability to perceive a hitherto unexploited profit opportunity. Thus, alertness has a role in detection and identification of relevant knowledge on the basis of which the entrepreneur will then develop different strategies in order to seize opportunities — strategies whose content is based on knowledge and experiences that are specifically related to the entrepreneur. Alertness is therefore prior to any choice, to any action. It is akin to a form of intuition, a ‘flash of perception’ which leads the entrepreneur to critically examine his/her knowledge, his/her accepted ideas, and thereby drives him/her to act in a spontaneously creative way. The mobilization of such alertness by the teacher facilitates the discovery of new means-ends, a framework which causes the integration of new resources for developing new content and/or a new method. This process defines a new framework for action, i.e., a new message, a new mode of transmission, and new goals and ends.

The first and paradigmatic theoretical form of this alert entrepreneur is arbitrage (Kirzner, 1978). The entrepreneur-promoter buys at low price to resell at a higher price. In order to do so, the entrepreneur must find a profitable arbitrage opportunity. To succeed, he/she must scrutinize the market, i.e., he/she has to be alert to the existence of new market opportunities. To quote Koppl (2002, p. 12), “Alertness leads to discovery, which leads to action.” The entrepreneur reveals him/herself as the agent of change in the market since his/her alertness has led him/her to discern, within the imperfections of his/her environment, hitherto ignored profit opportunities. Even more than a specific knowledge, this alertness, considered as a component of entrepreneurial action, becomes a tendency to problematize the opportunities discovered within the environment of the entrepreneur (Koppl, 2002). Alertness is therefore the mechanism by which an individual learns, in building conjectures, to transform information into knowledge, to push away the boundaries of his/her ignorance (4). Since the individuals are basically “ignorant of their own ignorance” (Kirzner, 1992), their natural condition may be called “self-ignorance” (Aimar, 2008). Reducing the scope of individual ignorance is in no way akin to a simple cumulative process of information (5). It
ultimately depends on the ability of each individual to subjectively perceive the personal cognitive profit stemming from the assimilation of new information. In other words, it depends on the ability of the individual to transform, to convert the received and perceived information into knowledge, de facto reducing his/her own sphere of ignorance. This ability presupposes that the student is him/herself a cognitive entrepreneur able to be vigilant, to be alert to profit opportunities that represent the knowledge transmitted by the teacher, and able to seize them, i.e., to transform into knowledge, into cognitive inputs that can reduce his/her self-ignorance, then fostering his/her personal development. The success of the teacher implies therefore that the student is the entrepreneur of his/her own cognition, becoming what we can call, quoting Aimar (2008), an “intrpreneur”.

This entrepreneurial alertness can give a specific cognitive content to the concept of entrepreneurship. The special talent of the entrepreneur lies in this differential of perception: he/she “knows” how to find market data and how to deploy them, i.e., how to transform them into knowledge of exploitable profit opportunities. For Austrians, learning means to become aware of previously committed errors (Aimar, 2005). Such errors induce that expectations that were previously made by the agents were systematically deceived. On this basis, the individual is encouraged to revise his/her past beliefs and to adjust his/her knowledge as a result. A true ‘economy’ of discovery (6) is thus initiated by entrepreneurial alertness.

From the point of view of the entrepreneur, all discoveries are a surprise, a genuine novelty. It does not consist of deploying existing resources, but of the injection of something fundamentally new, unpredictable, within the environment of the entrepreneur. In doing so, it expresses, through the mediation of alertness, the entrepreneurial motivation to gain in satisfaction. Therefore, entrepreneurial alertness has a role of production, of creation of knowledge (Harper, 1994; Schumpeter, 1999). The entrepreneur is thus akin to an agent creating the results he/she imagines; his/her imaginative capacity is building new understandings of his/her external environment (Shackle, 1972). It enables him/her to unlock the inertia in which he previously found him/herself. Then acting on the basis of his/her new perceptions, the entrepreneur lowers the transaction costs, shapes his/her environment thus generating new uncertainties which could in turn create new entrepreneurial opportunities. Thus, he/she aims at introducing a new cognitive framework, a new representation of the world he/she wants to share (Shackle, 1972).

To conclude, entrepreneurial alertness, in exerting a dual role of detection and identification of relevant knowledge on the one hand (Kirzner, 1978, 1992, 2000), of production and creation of knowledge on the other hand (Harper, 1994; Shackle, 1972; Schumpeter, 1999), carries an equilibration role in the environment of the entrepreneur: he/she will actually perform, within his/her specific environment, a coordination function. Thus, entrepreneurship is seen as a preferred modality of management of an increasing complexity. Indeed, a system based on entrepreneurship is a market system characterized by free entry into the exploration and creation of knowledge. As such, it demonstrates a greater flexibility than any formal system which delineates the boundaries of exploratory fields of knowledge.

DCP as an Entrepreneurial Process
To better understand the nature of the DCP, we compared its conceptual basis, its operation and its goals with the Austrian theory of the entrepreneur.

In DCP, tacit knowledge (interest, talents, skills …) of the learners are the starting point for learning. This stock of knowledge is the basis of interpretation of their environment. This database was developed during their life and is therefore defined on a biographical basis. However, individuals, who have by definition a singular existence that differentiates it from others, while facing the same event, will respond differently and will not have the same interpretations or abilities to identify potentially profitable opportunities (O’Driscoll & Rizzo, 1985). This interpretative scheme allows individuals not only to receive information from their environment but also to organize them according to cognitive processes that are specific. Based on such classificatory schemes, themselves subjected to evolution (Hayek, 2001), individuals exploit their alertness capability to identify problems, to propose ways to solve them, and to perceive opportunities within their respective environments. Because learners naturally identify what is in relationship with their own interest (Laborit, 1976), selfishness here is a powerful engine of entrepreneurial alertness (Smith, 1776, Kirzner 1980). Students are entering a form of self-competition as they will have to explore by themselves the foundations of knowledge they have. This paradigm based on development and the Austrian definition of the entrepreneur both take the individual as a starting point. These two concepts postulate that it is the idiosyncrasy of interests, talents and curiosities stemming from the singular experience of the individual that enables the identification of individual profit opportunities that he/she alone is able to perceive.

The central objective of the DCP, as in the Austrian entrepreneurship approach, is to discover and grasp a profit. In both cases, the perceived nature of the potential profit is twofold:
• Endogenous re-enforcement: because the individual has chosen a development path based on his/her interests, talents and curiosities, he/she refers to the memory of prior experiences that he/she finds rewarding. Each of these specific experiments was stored with emotions then felt: “Pleasant experiences are the ones that allow the preservation of the structure of the system, unpleasant experiences are those dangerous for it. The former will tend to be repeated: this is what is called “re-enforcement”. The latter will tend to be avoided.” (Laborit, 1976, p. 19). To increase the pleasure associated with learning improves the efficiency of biological impregnation of learned knowledge (Hayek, 2001) and increases the probability of fixation of information in long-term memory (Lazeron, 2007). Thus, the DCP, in the light of this endogenous re-enforcement process, capitalizes on the attraction felt for specific learning objects and increases motivation to study them. This corresponds to a cognitive profit or a non-monetary profit according to the Austrian theory of entrepreneurship.

• Exogenous re-enforcement: the individual also perceives the possibility of a material gain and/or a social benefit that is a potential re-enforcement. This will be expressed through the recognition (expressed by external agents) and material benefits associated with his/her potential success. If we consider the monetary profit as a reward for entrepreneurial action, this exogenous re-enforcement was also described by the Austrian theory of entrepreneurship.

In both approaches, DCP and the Austrian theory of entrepreneurship, the process of re-enforcement therefore expressed itself at endogenous and exogenous levels, being the implicit driving force of action and development. This similarity of the two approaches can be partially justified by the fact that both are based on the same biological foundations (Hayek, 2001; McCuddy & Reeb-Gruber, 2008).

The purpose of the DCP is to foster the development of functionally mature individuals. According to McCuddy and Reeb-Gruber (2008), he/she is a “[…] person who has developed into a mature personality — intellectually, morally, psychologically, and emotionally — such that he/she can function effectively in contemporary society. A functionally mature individual knows who he is, knows what he wants, and is not afraid to go out and get it without forgetting to consider others or the bigger picture.”

The entrepreneurial learning process and the functionally mature individual both involve the transformation of a part of tacit knowledge into conscious knowledge, i.e., to move from entrepreneurship to intropreneurship. Thus, when the personal development aims at the ideal of a functionally mature individual, it generates a reflexive dynamic in favor of challenging oneself. In sum, the fulfillment of the objectives of the DCP induces the transmission of an entrepreneurial behavior. In addition, the use of this teaching model by the teacher generates a mode of appropriation of entrepreneurial action by students.

Entrepreneurial Dimension of DCP Experimentation
We chose to analyze the importance of the entrepreneurial dimension in the educational experiment carried out in the Champagne graduate school of management in France; this experiment is a partial, rather than full, DCP application. The main objective of this experiment was to test the relevance of a DCP-based pedagogical approach to biotechnology management education (Parisot et al., 2009). To better understand the entrepreneurial nature induced in such experimentation, it is necessary to clarify the nature of the French context and issues associated with them. Indeed, these elements have contributed greatly to the identification of profit opportunities behind the development of this project. Furthermore, the analysis of the construction history of this experiment reveals the entrepreneurial dimension of the implemented action. Finally, the reported results (Parisot et al., 2009) permit verification of how easily entrepreneurial behavior is assimilated by students during the learning process.

Context
In the French educational system, the business schools are part of educational interfaces that work with most companies. Professionals are involved in teaching, and learning is optimized by teaching expected knowledge and skills in each specific sector. Thus, the course content evolves with business needs. The construction and working of this type of symbiosis (mutually beneficial exchange) is more complex for companies based on sciences such as biotechnology because the dominant model of education in France (TCM) is unsuited to the acceleration of the knowledge cycle, to the strong multidisciplinary teaching and to the rapidly changing business needs. In the case of biotechnology, development of cross applications in various sectors is widening the gap between practical reality and the compartmentalization of education based on the TCM (Friedman, 2008b). Yet the expansion of biotechnology in many different sectors (food, additives, cosmetics, biofuels, bioplastics, biomaterials...) has increased the importance of an appropriate education in management of biotechnology in the French graduate school
of management. This development, which can be measured by the increase in the number of patents over the last two decades (OECD, 2006), has reshaped the worldwide industrial landscape (Friedman, 2006, 2008a). Furthermore, current growth in the number of bioproducts in high volume markets, such as food (e.g., genetically modified organisms or GMOs, food additives, etc.) and health (e.g., recombinant molecules, biomaterials, etc.) creates an increasing need for companies to have staff with a dual competencies profile that combines biotechnology with management. In this context, to meet this demand has become a concern of institutions of higher education. But an important question remains: “How should students be trained in order to help them develop this dual competencies profile in the French context?”

Issues
Indeed, the French context has specific characteristics:

1) Given the rise of biotechnology in the food domain, the French have developed social representations that have generated strong resistance to assimilation of some products such as GMOs. Now, all new biotechnology applications emerge and grow in a climate of fear where the impact is to promote perception asymmetry (Stébé, 2008): the potentially beneficial aspects of biotechnological innovations seem ignored while the risks associated seem permanently exalted (Parisot & Rossi, 2008a). Ignorance and fear therefore structure the most prevalent representations. Since ‘Techno sciences’ cannot provide absolute answers (Beck, 2008), they are no longer able to reassure individuals (Latour, 1989, 1994, Callon, 1994). This causes a situation which is detrimental to the assimilation of bioproducts by the general public and generates the expression of resistance to applications associated with the concept of biotechnology (Parisot & Rossi, 2008b). This strong degree of uncertainty avoidance (Hofstede, 2001) influences the representations expressed by students who consider the issue of biotechnology with some reluctance. This resistance is even stronger when the students entering business schools have little technical and/or scientific background. Their academic knowledge cannot therefore help them to overcome these social representations in order to build their own representations.

2) To promote constant adaptation of educational content to market realities, the dominant profile of the teacher in a business school has long been that of a converted professional staying in touch with his business network. However, the recent reform of the French education system is currently replacing this type of profile with a more academic one — mainly coming from universities. However, such teachers have limited professional experience, the presence of companies in his/her network is not necessarily a priority, and the nature of his/her relationship with companies is often scientific. Clearly, this profile is generally less effective in monitoring the companies’ needs. It is therefore more difficult to adapt the content of his/her teaching to the changing practical reality.

3) The pedagogy traditionally deployed in France — the Teacher Centered Model (TCM) — is poorly suited to the development of multidisciplinary education. Because it predetermines the knowledge and skills to be transmitted, it does not take account of students’ preconceptions and does not allow them to evolve to a position more in line with market realities. Furthermore, it is of low value against the current acceleration of the cycle of knowledge in the field of biotechnology. The obvious inadequacy of the dominant educational model necessitates a change in pedagogy. However, the investment necessary for this change is often perceived as higher than the potential profit it can bring. Moreover, this investment is not the only one which is necessary. The construction of this type of multidisciplinary education also means to have or to acquire knowledge in two very different fields (management and biotechnology) and to build a strong collaboration with industry actors. This is why few French business schools have developed a multidisciplinary course in the management of biotechnology.

The Entrepreneurial Nature of Pedagogic Engineering
Among these schools, the Champagne graduate school of management has developed such a program. This strategic choice is based on a positive perception of arbitrage between costs and benefits associated with this investment. This initial perception of a potential benefit is not random. It involves a specific context and tacit knowledge mobilized by the stakeholders in this context. Understanding how stakeholders have come to realize this strategic choice is therefore to consider their profiles, that is to say their conscious and tacit knowledge. However, the initiator of the experiment is a teacher with technical expertise in the field of biotechnology and theoretical skills in management science. Moreover, he worked for several years in a biotechnology transfer center that has enabled him to develop relationships with many companies. It is this proximity with biotechnology companies that led him to discover a new profit opportunity: to develop training that prepares double competence profiles for meeting market needs. The teacher here plays the role of the promoter in the biotechnology sector. This step is a necessary prerequisite for the success of the educational innovation that was implemented later.
Based on this discovery, taking into account the French context and the issues mentioned above, the teacher has gradually built a double entrepreneurial conjecture:

1) The difficulties of market entry of some biotechnological innovations are neither ‘technical’ nor ‘economical’. They are ‘social’ and are expressed through representations shared by consumers.
2) The possibility that these refractory representations are shared by students indicates that the educational setting in which they study is not fitted to achieve his end. This awareness drives the teacher to reconsider his past beliefs (i.e., the speculative effectiveness of TCM) and to adjust his knowledge accordingly (i.e., the need to discover a new and more suited pedagogy). The teacher then formulates a second assumption: there is an alternative form of teaching that, starting from representations of students, is able to get them to challenge their relevance.

Based on these two assumptions, the teacher determines the necessary investment to build his program in biotechnology management. The requirement for him to have an approach to education that meets the market’s needs implies a double investment:

1) The first involves the acquisition of knowledge related to existing educational models in order to choose the best suited to his approach. Because the teacher maintains a scientific collaboration with the authors of the DCP, he has access to expertise in the pedagogic field. Following the advice of these authors, he mobilizes them to build a practical solution based on this new paradigm.
2) The second is a work of engineering. Because the DCP is a recent concept, no previous application of this teaching model in the field of management of biotechnology is reported in the literature. The teacher must find and assemble concrete steps to develop the course on new pedagogical foundations. To do this, he will look for, within his own subjectivity, within his previous representations, the tools he can deploy to build and structure a program based on this pedagogic model.

He then chooses PBL as basic architecture. He aligns PBL with the learning cycle of Kolb (1984, 2001) and the theory of reflection in action of Argyris and Shön (1989). Furthermore, to encourage students introspection in order to meet their own representations of biotechnology, he completes the construction in integrating the model of change by Watzlawick et al. (1974, 1975). This model distinguishes the incremental changes from those that trigger ruptures in mode of thinking. The aggregation of all of these tools resulted in the desire to take account of specific issues that the teacher has identified in his environment. Moreover, the practical solution he implements is unique because it results from his perception of the context and from the engagement of tools he knows and that he considers to be relevant.

The teacher’s alertness is entrepreneurial in essence: the teacher has devised a new framework linking a new educational end (i.e., the formation of dual competencies profiles) to new teaching methods (i.e., DCP). He acted this way in order to address an issue raised by the needs of biotechnology companies — an issue where solutions were not apparent before the entrepreneurial creativity of the teacher seizes this issue. So, because his path follows the process of entrepreneurial action, the teacher can also be characterized as a pedagogic entrepreneur.

**Entrepreneurial Nature of the DCP Experiment**

In order to test in vivo the two conjectures he built and to submit them to refutation (Popper, 1972 and Harper, 1994), the teacher applied his pedagogic innovation during four years with fifty students (Parisot et al., 2009). In order to respect the DCP principle of starting out with students’ interests, curiosities, and talents, those participating in the experiment were all volunteers. The results show that the conjectures made resist refutation by experiment (Parisot et al., 2009). Indeed, the application of this pedagogic construct based on DCP enables students to realize that their stance on biotechnology rests on — individual and/or social — representations which are in turn structured on supra-conscious premises (Hayek, 1973). Even if students do not develop new representations, they challenge their own representations. In doing so, they adopt an introspective attitude which repels the boundaries of their own rational ignorance. Beyond the purely monetary opportunities that may represent biotechnology, the teacher’s mission is primarily to help his students discover the cognitive profit opportunities coming from an awareness — even partial — of the premises on which their own representations are based. In accordance with the teachings of the Austrian theory of entrepreneurship, entrepreneurship leads to entrepreneurship in the sense that pedagogic entrepreneurship creates students’ intrapreneurship.

**Concluding Elements**

The Austrian theory of the entrepreneur can shed new light on the role played by the teacher who aligns content of teaching and pedagogy with market needs. Indeed, all individuals are able to exercise their alertness. All can discover profit opportunities. But what characterizes the behavior of the entrepreneur is, on the one hand, his/her
ability to perceive positive value in weighing cost and benefits related to the several different investments he has made, and, on the other hand, his/her decision to act in order to seize the identified profit opportunity.

So, why are these successful entrepreneurs so few?

Action is always based on a mental representation specific to the individual. This representation does not rely so much on the actual knowledge available to individuals, but on what they think they know about that knowledge (Yu, 2001). However, one should emphasize the inherently conjectural principles that lead the entrepreneurial actions (Harper, 1994). On this basis, the fate of any entrepreneurial conjecture is to be tested by using the screening of the market in order to eventually subject it to refutation (Popper, 1972). As noted by Harper (1994, p. 37), it is therefore possible to consider the market as an educative tool whose objective is to teach the entrepreneur the rewarding character of profit and the disciplinary content of failure. Taking into account both the epistemic returns and the costs related to the market screening of this conjecture, the entrepreneur was led to gradually learn from its failures. Therefore, if so few entrepreneurs seem to be successful, it means that many conjectures underlying their actions are actually refuted by the market screening (Harper, 1994).

Conclusion

In the Austrian theory of entrepreneurship, an individual has to perceive a single profit opportunity to be characterized as an “entrepreneur”. However, this case study demonstrate that in practice, in the context of the implementation of a biotechnology management program, the pedagogic entrepreneur must perceive and seize two distinct profit opportunities — one related to the investment in pedagogy and the other one devoted to elaboration of the DCP application.

The DCP has a central position in this case study. Indeed, its development is a result of an entrepreneurial process. The analysis of its nature reveals that its object is also entrepreneurial. And its application involves the creation of a program, which in itself is still an entrepreneurial proceeding.

Like the Austrian theory of the entrepreneur, the DCP considers the individual as a starting point by setting the individual’s interests, talents and curiosities as a focal point and it uses the exogenous and endogenous re-enforcements as the driving force of action. Its goal, which is to facilitate the development of people into functionally mature individuals, is an ideal which, to be achieved, involves an entrepreneurial process of learning. More specifically, basing a biotechnology management program on DCP principles requires the teacher to discover and seize a sequence of profit opportunities: (a) discovery of biotechnology companies’ need for dual competencies profiles; (b) discovery of a need for a double investment in pedagogy and in designing a program; (c) discovery of a pedagogical model (DCP) adapted to the challenges; and (d) discovery of the entrepreneurial content of the DCP. Because he has seized all of these discoveries, the teacher can then himself be considered to be a pedagogic entrepreneur. The entire process described in this paper is dependent on the particular context in which it fits. It therefore appears that the characteristics of his environment are a limit to the generalization of the entrepreneurial dimension of the teacher.

Moreover, the implementation of such a program involves having both cognitive and material resources within the institutional framework within which it operates. The freedom of action of the teacher and the means of its implementation are therefore also limits to the expression of his entrepreneurial trait.

In graduate schools of management, the freedom to experiment with new pedagogic models is a manifestation of entrepreneurship. It implies both a freedom in the choice of pedagogic models raised by the teacher and a freedom in how to build educational programs. In doing so, the class becomes the market test of the conjectures behind his experiments.

In France, the graduate schools of management have the responsibility to train entrepreneurs. The current reform of the education system pushes them to improve their performance in this area. The Development Centered Paradigm appears to be more effective in generating (or fostering) entrepreneurial behaviors, and in this context could find a place to help educational reform.

Endnotes

(1) The etymology of the term ‘entrepreneur’ refers to the Latin verb “prehendo-endi-ensum “which means “to discover, to see, to perceive, to realize, to capture” and to the Latin term “in prehensa” which means “to take, to seize”. Therefore, there is a perfect overlapping meaning between the process of entrepreneurship and the process of action in the sense of consistent expression of the desire to discover, to create, to identify new means and new ends (Cf. Huerta de Soto, 2008).

(2) It is appropriate here to quote Mises (1985, pp. 269-270): “This is the fact that various individuals do not react to a change in conditions with the same quickness and in the same way. The inequality of men, which is due to
differences both in their inborn qualities and in the vicissitudes of their lives, manifests itself in this way too. There
are in the market pacemakers and others who only imitate the procedures of their more agile fellow citizens. The
phenomenon of leadership is no less real on the market than in any other branch of human activities. The driving
force of the market, the element tending toward unceasing innovation and improvement, is provided by the
restlessness of the promoter and his eagerness to make profits as large as possible."

3) It is through alertness that the alternatives between which the entrepreneur will then choose are elaborated. Being
thus a characteristic of human action, alertness as such has a cost which is nil.

4) Baird (1994, pp. 145-146) explains that “the profit that motivates the entrepreneur is ex ante profit. The
entrepreneurial vision is an active originating force that sets in motion the series of transactions that accountants
evaluate after the fact. Alertness to hitherto unnoticed preferred possibilities is purposive human action. Profit is
attributable to that alertness.”

5) Taleb (2008, pp. 197-198) shows that the accumulation of information, far from reducing the ignorance of
individuals, can on the contrary sometimes contribute to its increase.

6) It should be emphasized the major difference between this approach and that found in the post-Keynesian and
Neoclassical approach is based on search. These competing theories argue on the basis of ‘imperfect information’,
*i.e.*, information that is known to exist but is expensive to produce (Cf. Stigler, 1961; Akerloff 1970, Rothschild &

7) Several theoretical approaches of uncertainty are possible: parametric, radical, bounded. For more details, cf.
Knight (1921) and Harper (1994).

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Enhancing Global Innovation and Creativity in the Classroom

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Abstract: The purpose of this paper is to demonstrate how experiential learning helps engage students in order to enhance understanding of concepts taught in organizational innovation and creativity. The teaching methods have been successfully applied to undergraduate and graduate programs involving multicultural and multi-disciplinary student groups. A comparison of courses in Organization and Management at two international educational institutions in France will be presented. In-class examples and exercises will be shared from the Organization and Management course taught at a business school and a Managing Creative Organizations course taught at an art school. These diverse and creative learning environments will show educators how to utilize in class resources and student knowledge to create a dynamic and interactive learning experience.

Introduction

The ability to develop and manage innovation across cultures has attracted greater interest and importance in business and education. How do we develop managers that can inspire creativity and shape innovation within the organization? How can educators develop creative and critical thinking skills within the classroom? How can this be applied in a cross-cultural and global context? Instructors need to help students understand and experience learning through new forms and concepts inspired by art and innovation. This requires engaging content where experiential learning can provide new insights and perspectives.

The Role of Pedagogy in Global Innovation

The evolving economy and marketplace demand an organization that can quickly innovate and adapt to global change. The development of a global mindset, creativity and cross-cultural skills has emerged as core competencies for today’s global business professionals. In order to prepare students for this emerging global business environment, it becomes increasingly important to develop a collaborative and engaging learning environment within a global and cross-cultural context. The use of experiential learning in classroom settings provides students with an opportunity to actively participate in the learning process. Experiential learning is defined as the process whereby knowledge is created through the transformation of experience (Kolb 1984). In applying experiential learning to pedagogy, students have the opportunity to link theory with practice through a holistic process. It follows a cycle where the learner has the opportunity to Experience through Reflection and Conceptualizing to Action (Kolb 1984). This model also appeals to different learning styles and has been expanded to reflect the Doers, Observers, Theorists, and Pragmatists (Honey & Mumford 1982). By employing a holistic process, the learner can set goals, experiment, reflect, and apply theories learned. This relates to the constructivist approach through discovery learning where structured activities allow students to explore concepts in order to discover important principles or relationships (Schunk 2000). Cognitive experiential self-theory shows the experiential mind learns directly, focuses on results, and forgets slowly (Epstein 2003). Moreover, art is increasingly becoming recognized as a process for understanding and learning new concepts and practices. The opportunity to use art as a process for creating global understanding and support across cultures is based upon the ability to encourage individual reflection and collaborative exchange. Art can effectively show essential aspects of a subject and guide our actions through its visual elements (Taylor & Ladkin 2009). There is also the element of play which creates a fun, engaging, and memorable activity for the group. This demonstrates the importance of developing a collaborative and engaging learning environment utilizing visual elements and interactive exercises within a cross-cultural context.

Comparison of Two Cases: Learning Practices in Business and Art

In order to study the impact of experiential learning in the classroom, a course in organization and management was developed and offered with an experiential learning approach. The course was offered to a multicultural student body in two separate educational institutions with an international focus – a business school and an art school based in Paris, France. The learning objective of both courses is to introduce students to key organization and management concepts and practices required for developing, managing, and sustaining effective and innovative organizations. A special emphasis is placed on the role of the individual and the group in observing, understanding, and managing behaviour in organizations. The curriculum designed for the two courses share a similar lesson plan with session themes that include organizational structure, culture, learning and change, and innovation and creativity. In order to develop a strong link between theory and practice, the pedagogy incorporated an experiential
learning approach that allows students to reflect, conceptualize, and experience the theories and practices discussed in class. In order to provide an in depth view of this process, two cases will demonstrate the application of exercises and projects that focus on managing innovative organizations in a global and cross-cultural context.

**Organization and Management in Business Education**

The ESCP Europe business school offers a Masters in Management which enrolls students from across Europe, in addition to Asia and North America. It is an interdisciplinary program that offers an international focus through its curriculum, field-based projects, and multicultural student body. The course in Organization and Management represents 24 students with some work experience, aged from mid- to late twenties, from thirteen countries in Europe, Asia, and North America. Evaluation consists of attendance and participation (20%) including a case presentation for each team, a final exam/case study on an innovative organization (50%), and a final group project with a report and presentation on an international organization (30%). The class offers specific session themes critical to developing and managing within an organization including structure, culture, motivation, learning and change, innovation and creativity. In order to enhance individual and group learning processes, students are presented with a lesson plan that incorporates experiential learning throughout the theme session.

The course emphasizes understanding and application of key organization and management concepts throughout the session themes. Each session is thus designed to engage students through a process of conceptualization, interaction and reflection. By employing a variety of practices and tools, the pedagogical approach is intended to meet the needs of different learning styles across personalities and cultures. Each session starts with a lecture and discussion concerning the theme concept and related theories. The concepts are applied through an interactive exercise, a simulation, a video or a case study with time for de-briefing and reflection of the experience. In order to enhance understanding of the purpose and process, images are often used to stimulate individual and group reflection. It is important to use visual elements and exercises to leverage the diversity of cultural knowledge and professional experience found within the classroom. For example, a theme session on innovation and creativity starts with individual and group reflective exercises concerning the question of innovations found around the world. This leads to the design and application of innovations on a world map. Students are then invited to discuss and reflect upon the role of cultural diversity, teamwork, and organizational networks in developing new innovations around the world. The session concludes with the presentation of a case by a student team that demonstrates the key concepts learned in class.

Evaluations were administered to students during the last session of the course in order to measure their learning experience and satisfaction level. On a scale from one to five where five represents excellence, a majority of the students noted the course as very interesting (4-5). This was attributed to the interactive and experiential learning approach. When questioned what they liked most about the course, the students noted interactive exercises and simulations (33%), followed by real case examples (15%), interactive discussions (13%), and case studies (13%). When asked what could be improved, a majority of students noted additional use of case studies and real life examples. As demonstrated by the evaluations, students appreciated the opportunity to understand topics through experiential learning activities.

**Organization and Management in Art and Design Education**

Parsons School of Art and Design offers Bachelor degree programs in art and design. The program in Design Management provides the opportunity for students to learn how to manage design in order to contribute business value. It is a multidisciplinary program that combines business practices with design sense in a global and cross-cultural environment. Through its intersection of the arts and business, the program offers a variety of in class and field-based projects. The course in Managing Creative Organizations represents 31 students in their late teens and early twenties with some or no work experience, from 19 countries in Europe, Asia, the Middle East, North America, and South America. Student evaluation consists of attendance and participation (20%), an exam (20%), short assignments (individual projects on leadership evaluation, an inspirational leader presentation) (20%); and a final group project with a report, creative project, and presentation on the future of creative organizations (40%). Providing students with a holistic yet structured introduction to organizations, the class offers theme sessions critical to developing and managing within an innovative organization including creative leadership skills, organizational structure, culture, motivation, learning and change, teamwork, collaboration and creativity. In order to stimulate creative and critical thinking processes, students are presented with a lesson plan that employs a holistic process for experiential learning within each theme session.
The Managing Creative Organizations course emphasizes discovery learning in order to allow students to explore concepts and relationships through structured theme sessions. By involving the students in the role of creative managers, the course emphasizes theory, practice, and interpersonal skills as applied to various class sessions. The students are encouraged to set their own goals, experiment and apply theories learned through role play, exercises, and simulations while reflecting through observation and class discussions. A variety of learning tools include warm-up exercises, interactive exercises, simulations, video cases, case studies, and presentations. Using a similar pedagogical approach as the business school, each session starts with a lecture and discussion concerning the theme concept and related theories. The concepts are also applied with an interactive exercise, a simulation, a video or a case study with time for de-briefing and reflection of the experience. In order to enhance exploration and understanding of the concept, a variety of images combined with simulation and role play are often used to stimulate individual and group reflection. Since these design students have limited work experience, it is important for them to experience the organizational issue or situation in order to better understand the context for solving a problem. For example, a theme session on cross-cultural collaboration involves role play during a business meeting between two countries where one team is responsible for presenting a new design. After a comprehensive review of theories and practices, the students are required to form teams and develop a final conceptual project demonstrating their vision of a leading creative organization.

In evaluating students’ learning experiences and satisfaction with the pedagogical tools and practices, the art and design school completed a similar evaluation form as used by the business school. On a scale from one to five where five represents excellence, a majority of the students noted the course as very interesting (4-5). When questioned what they liked most about the course, the students noted a broader variety of pedagogical practices and tools in order to create a dynamic learning experience. These activities included cases and real examples (21%), video clips (21%), interactive discussions (17%), interactive exercises (17%), simulations (15%), and presentations (9%). The students emphasized the need to engage in their learning through visuals and interactive activities. This was further demonstrated by their final project where they were asked to develop a vision of a creative organization through a structured process after the IDEO method utilizing inspiration research activities, ideation brainstorming techniques, and implementation practices to develop a reflective report and a creative project. A majority of the design students (70%) found the team and design process of great learning value as they could optimize collaboration and knowledge-sharing, while 30% found the development of a creative piece of value.

Learning Value
As demonstrated by the two case examples, the experiential learning approach is strongly favored by a multicultural classroom due to the emphasis on reflection, interaction, and problem-solving activities. The exploratory nature of experiential learning allows students to link theory with practice through a holistic process involving interaction and reflection. Instructors can utilize a simple pedagogical approach and design a learning process that is easily adaptable to learning or training objectives. The two cases showed that both business and art students (young adult learners in their twenties) prefer a dynamic learning approach made possible by active discussions and interactive exercises, in addition to tools such as video clips, case studies, and business examples. The business students prefer a more focused or structured learning process with case studies and interactive exercises focused on the session themes, whereas the art students prefer a broad array of visual and interactive tools to stimulate their learning environment. The broad and flexible pedagogical approach of experiential learning ensures an offering that meets the needs of students across cultures. Using the framework, instructors can design a dynamic learning experience by linking exercises to theories and models discussed in class. In order to add learning value, a variety of media and pedagogical tools should be used for individuals and groups. This ensures an engaging and dynamic learning experience where students can strengthen their creative and critical thinking skills.

References


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Abstract: While the number of female students in informatics-related study programs at many (secondary) educational institutions is traditionally low, their dropout rate is reported to be both considerably and frighteningly more prominent. The goal of this study was to develop and implement measures fitted to reduce the dropout rate of female students in two informatics-related study programs at our institution. We reviewed and extended all learning material pursuing a diversity approach thus ensuring gender conformity. We held preparatory programming warm-up courses before the start of the semester to reduce the gap in prior knowledge. We installed a mentoring program for programming beginners and we organized workshops aimed at raising awareness amongst the teaching staff of our institution in which the results of our work were presented and much room was given to discussion. The mentoring program turned out to be the most attractive and helpful activity for beginners.

Introduction
The present study was conducted at the Technikum Wien, a University of Applied Sciences (UAS) in Vienna, Austria in the frame of the GEMIS (Gender Mainstreaming in Informatics related Studies) project - a publicly funded effort.

Technikum Wien
Having been founded in 1994 the Technikum Wien was the first Vienna institution to be awarded the status of a University of Applied Sciences. Today UAS Technikum Wien is the largest purely technical UAS in Austria. With over 3,200 alumni and more than 2,500 students currently enrolled in its eleven bachelor’s and sixteen master’s degree programs, it offers a large range of bachelor’s and master’s degree programs. All of the programs are based on a solid theoretical foundation, while at the same time being practice-oriented. They are offered as full-time and/or part-time degree programs in the following four technical areas:
- Communication Technologies & Electronic Engineering
- Information Technologies & Business Solutions
- Engineering & Environmental Technologies
- Life Science Technologies

At UAS Technikum Wien, emphasis is not only placed on providing a high-quality technical education, but also on language training and subjects with a focus on business and personal development. The department of Computer Science organizes almost all lectures in information technology related fields in most bachelor and master degree programs.

Women in informatics
During winter semester of 2005/’06 there were 25,727 students attending studies at Austrian UAS, 42% of which being women (compared to 53% women attending studies at Austrian universities.) (Statistik Austria 2005). Despite these generally balanced shares, a closer look at the figures unveils certain dimensions of gender segregation.

Horizontal dimension of segregation
This segregation mirrors the segregation at workplace in Austria in general: On the one hand there are strictly male-dominated sectors, such as computing, engineering, electronics, robotic or automatization, whilst on the other hand a large majority of female students is found in such fields as education, health care or social work. Economics and business centered study programs are fairly balanced in terms of male/female ratios. (Statistik Austria 2005) However, the most significant gender bias manifests in the fact that the number of male students in the female-dominated study programs is never as low as the number of female students in the male-dominated study
programs, i.e. females in e.g. computing and engineering studies are exposed to an extreme minority situation. While the percentages of male students in female-dominated study programs like social work or health-care reach about 15-20 and group sizes thereby reach a certain ‘critical mass’, the percentages of women in computing and engineering at some institutions are merely in the single digit range. (Statistik Austria 2005)

Segregation within the studies related to computing, electronics & engineering
Within those studies women tend to prefer those who are interdisciplinary. Women are mostly attracted by a combination of “some” IT and economics, project management, languages or design. Or “some” IT in combination with biology, medicine, chemistry. The more the curricula are centered around “hardcore-engineering”, programming or electronics the less women chose them. In 2007/’08, the (technical) study program with the highest percentage of women was “Management, Communication & IT” at the Management Center/Innsbruck, with roughly a third of the curriculum being IT-related (Statistik Austria 2005)

The Gender Mainstreaming strategy – to cut it short – aims at overcoming the gender segregation in every dimension described above.

GEMIS
Our institution is no exception when it comes to the number of female students in informatics related study programs: in 2005 only 10% of the students in Computer Science Bachelor Program at the UAS Technikum Wien were women with a dropout rate approximately twice as high as for their male colleagues. The GEMIS project was initiated to investigate the reasons for the higher drop-out rate in informatics related study programs and to develop and implement measures to counteract.

In this work, we report the identified reasons for dropout and our experience with a number of activities developed and implemented at our institution in the frame of GEMIS to target the main goal of reducing the female dropout rate in informatics related programs of study.

Methods
In the first phase of the GEMIS project we aimed at identifying the main reasons for dropout with empiric research, based on which we developed several activities that were then installed as pilots and evaluated. Since we report on a series of activities that partly depend on results of previous activities, this section does not follow a strict timeline, nor line of arguments, instead we describe all the methods and activities and refer the reader to the results and discussion section for further aspects.

Empiric Research
The Empiric Research was carried out to gain a “status quo gender analysis” for 2 bachelor (Computer Science, Business Informatics) and 2 master (Multimedia & Software Engineering, Game Engineering) programs. This was done with

1. Quantitative statistic analysis of male & female dropout rates at UAS Technikum Wien since the introduction of bachelor & master studies in 2005/06
2. Qualitative interviews with 7 lecturers, 37 female dropouts, 10 successful master students. Interviews lasted between 30 and 60 minutes. Interviews were later analyzed with methods of qualitative content analysis.

Both, the dropouts and the then still successful students were interviewed following a personal timeline of development: When did your interest in computing start? Who supported it? In which way? How did you first hear about our institution? What did you expect when you decided to study computer science/business informatics? Which parts of the curriculum were more/less easy for you? What was the reason to eventually leave the program? What are you doing now? What would you suggest/recommend to attract more women to enter the program and graduate successfully?

The successful female Master-students were also asked about their professional biography. The main focus here was to let them describe successful strategies: If they noticed a knowledge gap between themselves and their male colleagues – how did they bridge it? How did they motivate themselves after bad results? How did they manage to continue after frustrating lectures and tests?

The lecturers were asked if they saw any differences in the way male or female students present themselves. Then they were asked if they already used methods or settings within their courses that might work against the gender bias. Also they were asked to refer to the main prejudices and “myths” that the society outside the college still keeps – like e.g. the prejudice that computing is a gift – either you have it or not - but lack of talent can never be compensated by intense studying.
Review of learning material

Existing learning material (slides, scripts) was scanned for inappropriate or discriminating terms by gender mainstreaming experts and later extended. Pursuing a diversity approach we illustrated abstract technical concepts with real-life examples and/or analogies. Our collected extensions were published institution wide as part of a ‘Gender-Toolkit’ document, available to the teaching staff.

Summer courses

We held programming warm-up courses in the summer before the start of the semester. These courses are open to both male and female students, targeted at absolute beginners and not graded. After a short introduction by the lecturer, the course pursues a strict hands-on approach with students working on simple programming problems in the JAVA hamster model (Boles 2007). Students are encouraged to learn at their own speed, taking one step at a time - not missing one on their way. Instructors are present at all times to answer any question, offer support and introduce and explain more advanced programming concepts on an individual level. The course is subject to the standard course evaluation process of our institution.

Mentoring

We initiated a mentoring pilot program for programming beginners in the first semester. The program was open to both male and female students. Mentors were recruited from higher level programming courses. We had 13 mentor/mentee pairs matched at a kick-off meeting. There was a separate briefing for mentors giving guidelines as to how to support mentees, e.g. not provide ready-made solutions but rather support the mentees in their quest to understand and find a solution themselves. At the kick-off meeting, we established strict communication rules mainly in terms of response times. At the end of the semester the mentoring program was evaluated.

Results

The results of the quantitative analysis of dropout rates are shown in Table 1. The dropout rate for women was about 50% in Computer Science. This is extremely effective – for the percentage of female students had been only about 11% from the very beginning. This appears even more dramatic when looking at the absolute numbers: Of all the students starting e.g. in winter semester 2004/05, about 70 were men and 7 women. With half of the women quitting in the 2nd or 3rd semester, their number is reduced to 3 or 4. If one or two more of them leave the program, there are only 2 women left and, when placed in different learning groups, they will find themselves to be the “only representant of their species”.

<table>
<thead>
<tr>
<th></th>
<th>Bac. Computer Science</th>
<th>Bac. Business Informatics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>male</td>
<td>female</td>
</tr>
<tr>
<td>not (yet) dropped out</td>
<td>177</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>(70.8%)(47.4%)</td>
<td>67.7%</td>
</tr>
<tr>
<td></td>
<td>73</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>(29.2%)(52.6%)</td>
<td>(32.3%)</td>
</tr>
<tr>
<td>dropped out</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>total number of students</td>
<td>250</td>
<td>38</td>
</tr>
</tbody>
</table>

Table 1 Dropout rates since winter 2004/’05

Figure 1 shows the time line of female dropouts, i.e. in which semester of the program they decide to leave. We see the highest dropout numbers in the second term. In the qualitative interviews of the female dropouts the main reason given for dropout was the lack of prior knowledge and skills in technical fields, mainly programming and database systems. Women interviewed stated that closing this gap is more than challenging and that they failed the exams at the end of the first semester, then they tried to repeat them, but after a second unsuccessful attempt eventually left the program, thus the peak in the second term. These findings were the main motivation to create mainly measures that aim at the entrance phase or even the pre-study-phase.

The summer courses offered had good attendance and the students’ feedback was positive. The fact, that the course was not graded and offered individual support was well received. Furthermore, the students found the JAVA hamster model to be a good choice for programming beginners.

In our mentoring pilot we had 10 mentor/mentee pairs. In one case, communication between mentor and mentee was problematic and eventually broke down. In all other cases the mentees’ feedback was overwhelmingly
positive in many aspects. Communication was fast and efficient and support was helpful. All mentees reported that the mentoring program was a suitable measure. Mentors reported that the time and effort was sometimes critical, especially in intense study periods. Only one of the mentees initially failed the programming course, but passed at the second attempt.

![Figure 2 time line of female dropouts in Bac. of Computer Science (BIF) and Business Informatics (BWI)](image)

**Discussion & Conclusion**

Investigations were carried out to identify the reasons for dropouts. Although the exact reasons are very difficult to assess, as many of them lie within the personal sphere of students, we identified a gap of prior knowledge in combination with the generally low initial number of female students to be the main reason for female dropouts in informatics related studies at our institution. Both factors lead to a scenario in which the women are in small groups, most of them have little or no prior knowledge, and are confronted with a large number of male students who appear to master the challenges of the complex technical subjects with ease, the reason for which being their prior knowledge and not some general rule that males are ‘natural born programmers’. This leads to a high level of frustration.

With the summer courses and the mentoring program, we try to minimize or even close this gap. The JAVA hamster model is a great environment for programming beginners as the problems to be solved by the students are formulated in everyday language (e.g. have the hamster collect all grains in the territory) as opposed to many traditional programming courses in which a higher level of mathematical knowledge is required and often the task of finding (and programming) a solution of a problem is less time consuming than understanding the Math behind the problem.

The mentoring program is the biggest success of our efforts. It was well accepted, received great feedback and showed measurable success. The fact that mentors are students that might have had the same or similar problems a year earlier provides some comfort and reduces the level of frustration arising from the scenario described above. We found it important to give the mentoring program a formal character with a kick-off meeting and an evaluation afterwards. The reason for this is partly connected to our mode of mentor recruitment. In Austria we do not have the tradition of extracurricular activities as a valued asset and thus offered a reduced number of assignments in the advanced programming courses as incentive for higher level students to sign up as mentors. This proved to be somewhat problematic. First, it requires administrative activities and coordination between lecturers of two courses and second, we need to monitor and evaluate the mentors’ effort in order to see whether a reduction of assignments is justified. We also faced the problem of having too many mentees for too few mentors. In our pilot we decided to prioritize female mentees in the matching process. Financial compensation could be another incentive; however, the idea was rejected for ethic reasons by our team. Without the support of the study directors, all involved lecturers and administrative staff our mode of mentoring would probably be hard to install. Students’ organizations offering mentoring as a service in combination with the public appreciation of extracurricular activities appear to be a better model.
To communicate our results and experiences and raise awareness at our institution we held two inhouse workshops for teaching and administrative staff, however, attendance was rather low. The opposition to be met comes from different sources: Many lecturers are open towards the subject – but if the workshops are on a voluntary base, they will not attend it – due to their general workload. Some lecturers assume that gender-sensitive curricula and didactics is put into practice by ‘being pc’ (politically correct behavior) or not discriminating against their few female students offensively. They cannot imagine how gender-sensitive methods of teaching and learning could be of any further need to them. Others think it is the parents’, schoolteachers’ or society’s duty to encourage girls and to bridge the interest gap between boys and girls from early childhood on. Then male and female students would attend technical colleges equally – and they can continue to teach with their methods at hands. Others meet the gender gap with an approach of social Darwinism: If women pretend to have equal rights and aspire equal jobs, they must pass equal lessons and tests – so nothing should be changed at all. They are overlooking the fact that their term of understanding computer science is the dominating one – but only one of many. It might be the case that all the programming lecturers teach programming the very same way they were introduced to the subject themselves, and cannot even begin to imagine that there are other – maybe even better – ways possible, like using the non-technical Hamster model in the regular course. This prolongs the general view that computer science is a “from nerds for nerds” study program. Descriptions of IT as a “creative, communicative, team work” are not the dominating perceptions in public. Even further, it leads to a lack of female professionals and – since lecturers are often recruited from the personal networks of study directors or other lecturers – mainly male candidates are hired: an endless circle. The number of female IT role models at our institution is rather low; in the computer science department, there are exactly two female lecturers currently employed.

We conclude that action on several levels is necessary. On the student level, we have good experience with preparatory summer courses and a mentoring program to close the gap in prior skills and reduce frustration. On the lecturer level, heightened sensibility and raised awareness of the mechanisms behind female drop out is certainly important. Although it is almost beyond the scope of our work it must be mentioned that a general rise of female student numbers in technical programs could also help reduce the number of drop-outs.

References

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Meeting the Fundamental Objectives of Business Education: A Framework to Align Business Education with Changes in Global Competition

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Abstract: Business education should reflect changing needs in business environments to ensure graduates are competitive in the real world. However, the complexity and changing dynamics caused by accelerated globalization have made it difficult for business schools to determine how to incorporate these changes in their curricula. The authors believe that teaching general phenomena in the global environment is inadequate to prepare business graduates to be globally competitive. Business schools should design customized curricula to assist students in identifying and learning critical skills, knowledge and attitudes to compete in their targeted global markets. To this end, we propose a conceptual framework for aligning business education with changes in the global environment to effectively prepare students to be competitive in the global markets.

Introduction
It is generally agreed that business education should reflect the changing needs in the business environment to ensure business students are competitive in the real world (Friga et al., 2003). In light of the accelerated globalization since the 1990s, many business schools are adding special courses in a global context or are adopting some form of global immersion for their programs (Rosenbloom, 2009). Given the increasing complexity and changing dynamics in global markets, it is often difficult to align a business curriculum with constant changes in the competitive global environment. Furthermore, the unique characteristics of each business school calls for different strategies for the alignment. Therefore, what to change, when to change, and how to change the curriculum have become a major challenge faced by most business schools.

In addition to the complexity and constantly changing dynamics in global competition, the speed of change also puts business schools in a reactive mode, which implies there is little time for business educators to conceptualize or theorize the alignment of curriculum with global environment. As a result, there is a lack of discussion on principles guiding the alignment at the conceptual level or discussion on the process of alignment at the practical level.

We believe that business educators will benefit both from the conceptual level and the practical level in identifying relevant changes in the global environment, and how to incorporate these relevant changes in the curriculum. Our objective is for this paper to act as a catalyst to promote further discussion on this topic. By looking through the lens of student competitiveness, we propose a conceptual framework to help align business education with changes in the global business environment. This framework is intended to assist business schools to identify relevant change drivers in the global environment, design flexible curricula, and enhance their graduates’ competitiveness in global markets.

To this end, the paper is organized as follows. We will first conduct a brief review of the history of the history of the evolving roles of business education in relation to the business world. We will then state the fundamental objectives of business education. The main characteristics of the current global business environment and their implications on business education are discussed in the subsequent section. A conceptual framework for designing business education that centers on student competitiveness is proposed. The paper concludes with some thoughts on the implementation of this framework.

Evolution of Business Education
It was pointed out by Friga et al (2003) that the close relationship between business education and the business world implies pressures on business education to be responsive to environmental changes. Business education has been evolving along with the development of the business world since the industrial revolution, through the age of information, to the current era of knowledge-driven digital society. Business educators have observed the changing business environment, identified and predicted characteristics and needs in each era, and developed bodies of knowledge, tools and value systems for managing business. Accordingly, the business educational structure and systems were developed for an effective transfer of these bodies of knowledge, skills and values.
An important factor contributing to the success of business education is how close it has reflected, conceptualized and learned from the changes in the real world. In most cases, educators were able to analyze, summarize and abstract knowledge from their observations, as well as transform the knowledge into teachable skill sets in a timely fashion. The development of the western business world in the past 100 years since the industrial revolution is partly attributed to the western business education’s effective and timely responses to the changes and needs of the industry by introducing diverse programs and curricula. The discipline of management information systems (MIS) is an example of business education’s efforts to conceptualize the technology development and its applications in the business world (McNurlin et al., 2009).

The evolution of business education in relation to the business world could be arbitrarily divided into several stages. Generally speaking, needs arising from mass production during the industrial age drove business schools to focus on research before the 1970s (Friga, 2003); the popularity of MBA programs in the 1980s was considered as a second wave of business education aiming at bridging the practical and the theoretical (Mintzberg, 1990; Vinten, 2000; Schoemaker, 2008); globalization and the rise of emerging markets in the mid 90s prompted a revamping of business programs to be more global both in terms of content and format (Ghemawat, 2008). The most recent trend, as a result of the 2008 financial crisis, called for a renewed emphasis on ethics, leadership, risk management and sustainability as the core of business education (Holland, 2009). As we will discuss in the next section, the need for interdependency and co-existence of global, national and regional economies due to globalization will have a profound influence on how business education will be transformed. It is imperative for business researchers and educators to lead the next transformation of business education in this new global context.

Fundamental Objectives of Business Education
In Cyert and Dill’s 1964 article, they identified the missions of business schools being 1) to help students acquire knowledge and skills to function effectively as managers and support personnel in business and industry, 2) to train faculty to teach and conduct research, 3) to provide practical research to improve business practice for improving the management of interrelationships between economic institutions and the rest of the society. Van de Ven (1989) stated that the two missions of professional schools are 1) to conduct research that advances knowledge to a scientific discipline, and 2) engage in the application of the knowledge to practice. Davis, Proe and Boxx (2006) suggested that there is a general agreement that “knowledge taught in business schools should prepare one for the professional of management”. These statements crossed several major transformations of business education. It is clear that the practical aspect of preparing students to apply their learning in the real world has been an important objective for business schools.

In this paper, we summarize the fundamental objectives of business education as 1) to provide students a body of knowledge, a set of analytical, managerial and decision making skills to effectively deal with problems in the real world, 2) to foster creativity and innovative thinking, and 3) to educate and promote the value of leadership and ethics. While the trends of business education may affect the contents of the curriculum, we believe the fundamental objective of business education does not change. The most important objective is always to prepare business graduates to be competitive by instilling in them the values needed by organizations and communities who strive for their profitability and sustainability. The authors maintain that these fundamental objectives should be used as the principles to guide the overall design of business education, which includes all related activities such as setting strategies, building structures and systems, employing the right people, as well as designing curricula and co-curricular activities.

Business schools evolve with the business world by producing graduates equipped with necessary SKAs to be competitive in the real world. However, this evolution has been disrupted by the accelerated globalization process. In the next section, we will discuss the unique characteristics of the globalization process that have profound implications for the transformation of business education.

Characteristics of Changes in the Global Business Environment and Implications on Business Education
The complexity of the business environment due to globalization can be characterized by two interwoven global processes where many developing countries are progressing in terms of industrialization when most developed countries are in a post-industrialization era driven by rapid technology advancement, international trade, and outsourcing. The interactions between these two forces in different regions has generated profound historical changes in the global business environment from the manufacturing base and organizational structure, to management decision-making, as well as many aspects affecting the ways of doing business and ways of living. Not only are these changes complex, but they are occurring at a rapid pace. And they are happening around the globe,
not just in the familiar western countries where business education is traditionally rooted. The characteristics of these changes can be described according to four perspectives.

**Global industrial infrastructure**
The global restructuring of the industrial infrastructure has promoted the emergence of new economic orders and shifted world economic centers from the west to the east. Companies can no longer make decisions based on the interest of one country or one region. Decisions have to be based on local demand, and must fit regional and global market conditions and economic scenarios at the same time. It is worth noting that different countries and regions of the world are experiencing different stages of industrial infrastructure changes. Even in the same country, different regions are experiencing different impacts from the different stages of globalization. The changing industrial infrastructure at the national and regional levels implies that globalization needs to be taught not only at the macro level, but also at lower levels addressing unique change drivers and stage of globalization at the industry, country, region and firm levels (Kao & Mao, 2009).

**Globalized competition**
The accelerated globalization of business activities and competition has created such forces that cause fundamental changes to the economical and political relationships among nations and business enterprises. National problems and economical challenges can no longer be solved at domestic level merely by adjusting domestic policies. Competing at a global level requires leaders of nations and organizations to continuously monitor and understand changes at the global level, and to organize their resources and implement their plans at the global level so that they can respond locally in time by effectively utilizing people from diverse cultural, professional and educational background. Business educators need to understand the importance of how to compete and cooperate with competitors from different parts of the world. The knowledge economy has facilitated ubiquitous access to knowledge thereby empowering global competitors and intensifying global competition. Not only global competitors have full access to the business tools and bodies of knowledge being taught in western schools, they also have additional advantages such as cheaper labor and material costs, and strong government support. The implication for business education is that understanding and teaching general business knowledge and skills can no longer make our students more competitive as knowledge is accessible and free throughout the world.

**Global interdependency and co-existence**
Globalization has made nations, communities and people worldwide more interdependent politically, economically and culturally. Interdependency further highlights the importance of respecting cultural differences, protecting the natural environment, and promoting ethics in business practices and competition. The increasing importance of business ethics and green technology both demonstrate the realization of the sustainability of the nature and our civilization. Students become more competitive when they have a strategic view about corporate sustainability through the lens of environmental and social sensitivity.

**Speed of change**
Changes are happening instantaneous and continuously. Countries, communities and organizations of all sizes have little time to adapt to these changes. Consequently, educators have much less time to systematically capture knowledge, and then transform it into tools and skill sets for teaching.

**Summary**
Understanding changes in the competitive global environment, incorporating these changes into SKAs and then teaching them, present an unprecedented challenge for business schools. Not only have the traditional business subjects undertaken a new layer of complexity, but other related areas such as culture, laws, economies and social movements also need to be addressed. Furthermore, the speed of changes imposes a short timeline for making necessary adaptation to the curriculum. The implications of these changes to business education are 1) teaching general business knowledge and skills can no longer make our students competitive. Students should learn how to apply the knowledge in different parts of the world. 2) there is no standardized set of SKAs that can make massive number of students competitive in what is complex, globalized, and increasingly segmented real business world. 3) it is imperative to develop students to attain the ability to integrate, conceptualize, and innovate to create new knowledge so they can adapt to changing environments and face disruptive competition. 4) the definition of competitiveness is different for each student who will compete in different markets at different times. 5) develop teaching and learning process to make students more competitive.
Proposed Conceptual Framework

Business education could be an enabler to prepare students to be competitive in global environments. Davis et al. (2006) pointed out that the enabling process should be centered on students’ success and their needs. We suggest that each business school should observe the competitive environment to conceptualize what students should learn and to define the content and format of the curriculum to enable each student to be competitive in the environment. This should be an ongoing process to reflect the changes in the environment. Thus, we have developed a conceptual framework to represent our proposed approach as shown in Figure 1.

As depicted in Figure 1, students with diverse backgrounds, strengths and interests are entering business schools. The circles on the left represent different global market segments graduates will face. Different set of SKAs are required for them to be competitive, depending on the target markets they choose. The key component of this framework is the education process bridging the students with the environment. Through this process, business schools will continuously observe and monitor the environment to identify the needs in each market segments, and to help students identify the target markets in which they can be prepared to be most competitive, and thus teach them the relevant SKAs. As the global environment changes, new information is used to update the aligning process so that curricula are adapted to reflect such changes and so that students can learn the most current SKAs to remain competitive.

Effective alignment can only be achieved though a well designed education system that includes curriculum content, delivery, student development and support, and a solid value system. Given that environmental changes in each circle will have a different effect on each student, it is imperative that the alignment process be robust and responsive to students’ needs, strengths and the needs of specific market. Hence, this alignment is achieved through education systems that will help students identify a pathway to achieve their own level of competitiveness based on their own strengths.

Conclusion

We suggest that the objective of business education is to enable business students to be competitive in the business world. Given that effective competitiveness takes on different meanings in different markets and varies depending on the individual, each student must develop unique capabilities to be competitiveness in particular markets. We propose a business education system that allows students to build on their individual diversity, including their strengths, personal background, and career interests. This system will provide a flexible curriculum to strengthen their portfolio to be competitive in a particular target market in a particular point of time in their career path. This framework intends to align each student, or groups of students, with similar interest and background, to the target markets identified for them as most competitive. To implement this framework, business schools should 1) build a teaching and learning process so that students understand different SKAs are required for different types of competitiveness, 2) teach students ways to identify their potentials in unique competitiveness context, and 3) help students practice the method most conducive to realizing their unique competiveness. An implementation model will be presented in our future work.
References
Abstract: This paper summarizes the approach that a faculty team is using to embed innovation throughout their curriculum so as to prepare undergraduate students for a constantly changing global workplace. The process includes the creation of an integrated framework of innovation knowledge and skills that are needed, documentation of the extent and type of innovation currently learned, and synthesizing a definition of innovation that matches the school’s existing programs and its future goals. To share this evolving vision of an enhanced and coordinated curriculum that generates greater learning experiences and developmental opportunities, the team plans to engage larger groups of faculty and share evidence and examples from industry and higher education regarding the need for innovation training and development. The paper also describes the elements of a planned repository of innovation teaching tools, curriculum and course unit materials and assessment rubrics.

Overview
A long standing criticism of business school curricula is that they are organized as discipline-specific knowledge silos when what is most needed are cross-disciplinary initiatives that emphasize creatively innovative and integrated approaches toward addressing the complex and dynamic challenges faced by society and business (Bennis & O’Toole, 2005). In response, the Dean of Suffolk University’s Sawyer Business School asked a group of senior faculty and administrators from a wide range of academic disciplines to find ways to ensure innovation knowledge and skills were integrated systematically and cumulatively throughout the curriculum. The self-named Innovation Integration Team (IIT) approached this mandate by first creating an organizing framework of innovation skills and knowledge based on industry experience and research expertise. This was mapped out by content area and level of targeted competence (basic, intermediate, and advanced). The framework will be used to mobilize the efforts of faculty and academic departments to ensure that the full spectrum of innovation skills and knowledge are integrated in the curriculum and coordinated across each year of student matriculation and diverse business disciplines. Moreover, this organizing framework will be utilized to review the existing curriculum to identify opportunities for improved innovation integration.

This paper overviews the processes our team is using to create a framework of integrated innovation knowledge and skills, document the current state of the framework as a curriculum assessment and program development tool, share our evolving vision of an enhanced and coordinated curriculum, and describe the challenges and benefits of deeply involving faculty from diverse academic disciplines in integrating their innovation skills and capabilities.

An Organizing Framework for Innovation Integration

Creating a Framework
The first challenge the IIT faced was to integrate the various disciplinary and application perspectives on innovation represented by our five person team. The IIT included two entrepreneurs – one focused on new products and the other on market opportunities. The three academics had backgrounds in operations and supply chain, corporate innovation and strategy, and organizational behavior and mental models. After an inconclusive discussion, we postponed defining innovation until we explored the concept a bit more. One team member reviewed a variety of leading innovation management textbooks (e.g. Tidd & Bessant, 2009) and Handbooks (e.g. Fagerberg, Mowery, Nelson, 2005) to identify broad thematic areas of innovation knowledge and skill. Our team identified the boundaries of the field by articulating a range of key skills and knowledge related to innovation. The lengthy list led to a focus on creating organizing categories around various dimensions of innovation as defined in the literature and we experimented with various ways to classify these dimensions, such as: (1) individual-, group-, organizational- and interorganizational-level dimensions, (2) skills vs. knowledge, and (3) other grouping schemes such as “Innovator Mindset & Skills” and “Innovation Processes & Systems.” This assessment was next organized into a robust framework (see Table 1).
Our guiding purpose for this classificatory framework of innovation knowledge and skills was to develop a comprehensive but understandable overview that curriculum stakeholders could easily comprehend and embrace. We subsequently dropped items from our initial list of Innovation skills and knowledge (e.g., National Systems of Innovation, Sectoral Systems of Innovation) that would be challenging for the typical undergraduate to comprehend given less work experience and thus an underdeveloped context for making sense of the concepts. As a result, we were able to reduce the number of innovation knowledge and skills categories from the initial list of twenty three items in Table one to the seventeen items of Table two. To this end, we will be working on a rubric that organizes these knowledge and skills categories into beginner, intermediate, and advanced levels of expertise that can be used to develop specific learning goals for specific course offerings in all majors and levels of undergraduate study.

**Defining Innovation**

At that point the IIT sought to find an appropriate definition of innovation. Our dean had expressed his thoughts on the subject. We also reviewed a half dozen existing definitions, ranging from Tidd & Bessant's 2009 definition: "Innovation is the successful exploitation of new ideas" (p. 16) to one widely used by those who focus on corporate innovation: "Innovation is a non routine, significant and discontinuous organizational change that embodies a new idea that is not consistent with the current concept of the organization's business" (Mezias & Glynn, 1993). The IIT discussed the merits of each definition for adoption by our group, followed by a discussion of which phrases and ideas we could extract from each and craft into a definition that captured the uniqueness of our school and programs and still be able to withstand scrutiny by industry and academia. We reduced the various definitions into a short and succinct statement that reinforced the conceptual framework we had developed, yet was inclusive enough to be consistent with the school’s existing initiatives in this area. We came to the following definition: “New ways of creating value from ideas to their execution by integrating the creative capabilities of individuals, groups, and organizations.”

**An Organic Organizational Change Process**

Envisioning a revamped curriculum and coordinated faculty effort around a programmatic theme was daunting. Although the IIT members all had extensive leadership experiences across a variety of settings, none could suggest a structured outline for approaching what would essentially be a massive bottom-up organizational change effort. It was recognized that in order to achieve the overarching goal of ‘integrating innovation across the curriculum,” several unstructured tasks needed to be addressed simultaneously. As a result, an organic process emerged that we did not attempt to structure. The following activities constituted the *fuzzy front end* of our innovation integration process.

The conversations themselves were not linear. We found ourselves identifying needs and next steps simultaneously with the discussions of innovation knowledge and skill domain and its breadth and variety. Concurrently, we commented on how to engage more faculty to initiate and coordinate this curricular and culture overhaul. After the first few meetings, a team member pointed out our non linear process and the group decided to continue in such a manner. The reasoning was that the meetings had felt productive, though not in any way an outside observer could measure. The sense of progress came from a shared belief that exploring the facets of innovation was helpful for arriving at a shared understanding of the field and how it fit with our students and faculty.

We were aware that in order to draft implementation plans for infusing innovation, it would be necessary to understand which existing courses and co-curricular experiences developed students’ knowledge and/or skills in innovation. However, with so many ways that the word innovation is used in college programs, the IIT had also to define the scope and focus of innovation in a way appropriate for these students, our faculty’s expertise, industry demand, and the like. At that point, the IIT decided to continue vacillating among the multiple tasks as our conversations naturally dictated. This encouraged creative exploration in defining the scope of the integration effort, while not losing important implementation insights that emerged during these discussions. Explicit support for the process allowed us to continue to use it without feeling beholden to more normative meeting formats for task forces. However, we did generate action items that were helpful in organizing the information discussed or for continuing the discussions and ideas offline between meetings.

The semi-structured meeting format would not work well for every school attempting to implement a large scale curriculum change effort. Faculty who learn and think via linear processes would struggle with the rapid leaps made when members creatively built upon or moved the conversation across topics, levels, and purposes. For example, the definition of innovation arrived at by the team involved leaping between a wide range of proposals offered by project team members and this process was often digressive, with personal stories interspersed with
literature references. We also reviewed and rejected many ideas proposed by team members. It just so happened that the five IIT members were familiar with each other’s styles as well as their potential level of contribution in brainstorming sessions. Combined with a high level of mutual respect, this familiarity fostered patience with leaps of logic, diversions, and criticisms of proposals, and it was supported by a belief that ideas could be returned to without personal egos intruding.

The Business Case for Innovation and Pedagogical Examples
The IIT determined that it needed to rely upon external research and best practices in three areas, and each is described in more detail below. Our team received a summer faculty development grant to continue our work of the past year and build repositories for use by the IIT and our colleagues that include extant industry knowledge and reports of best practices, and academic resources and articles on the teaching and learning of innovation.

First, the IIT will look at empirical and theoretical research regarding innovation's impact on personal, group and organizational performance. This body of research is critical for determining what current students should learn in order to be well educated and prepared for their careers, regardless of the field. We plan to collect and summarize published studies of innovation tools, techniques, and processes and their impact on outcomes. The goal is to develop a resource library for faculty, and a research foundation for identifying the potential pedagogical boundaries of this initiative.

Second, the IIT will find additional practitioner evidence to support the claims of the advisory boards to make a business case for employees who are innovative or capable of fostering innovation. We realized that some faculty are less willing to engage in change efforts and a clear and compelling argument would be needed to convince, and hopefully motivate them, to partner with us in this effort. Our advisory boards have provided anecdotal evidence that innovation is critical. They periodically meet with academic departments and explain the importance for graduate to have a capacity to adapt to, anticipate, and be comfortable with constant change. According to the Association of American Colleges and Universities (2008), 70% of surveyed employers would like colleges and universities to emphasize the ability to be innovative and think creatively. About the same number wanted an emphasis on critical thinking and analytical reasoning skills. Calls for enhanced innovation and creativity in business curriculum point to the fundamental skills graduates must have (Kao & Mao, 2010).

Third, the IIT will focus on the best practices in the teaching of innovation skills and knowledge in colleges or in businesses. In doing so, we hope to find examples for embedding an innovative mindset and culture into companies within a variety of industries. This requires information on how industry addresses innovation as both knowledge and a skill, as well as assessment tools and metrics that are used. Our IIT sees critical thinking and analytical reasoning skills as best developed when students apply these skills to complex problems that require them to integrate their knowledge and skills from multiple disciplinary perspectives. The goal is also to find examples of best practices in teaching and learning innovation in the workplace. Instructional resources will also be collected and shared with faculty.

Embedding Innovation Into Curriculum

Innovation Parsed by Year and Skill Level
We took a preliminary snapshot of content/tools/skills within our undergraduate business curriculum by reviewing the syllabi of required courses and speaking to course coordinators and faculty. These discipline-based core business courses create borders that our innovation integration project will attempt to cross and link more synergistically.

Using a model (see Figure 1) suggested by our Dean we aim to incorporate all areas of the undergraduate business degree in this effort in a coordinated manner. We recognized that a change on this scale would require faculty to have a clear understanding of the overall effort and goals. We began to build an understandable, user-friendly framework for presenting to faculty the scope and depth of innovation and knowledge skills we should inculcate into the curriculum.

**Basic Level:** Introductory Business core courses designed for Freshmen and Sophomores would provide basic knowledge of how innovation can be integrated with business skills in simple case and experiential learning exercises. Some of the knowledge and many skills in Table 2 would be introduced in these courses.

**Intermediate Level:** Sophomores and Juniors take “Principles of…” courses that provide opportunities to work in teams on problems that are based on real world organizations but do not require direct interaction with an external client (Gijsselaers, 1995). Others courses in these years incorporate interaction with local organizations with real projects that are limited in scope.
Advanced Level: All senior year students take a project-based capstone course in their major where they work in teams with external client organizations on a negotiated project and set of project deliverables (DeFillippi & Milter, 2009; Wankel & DeFillippi, 2005).

Innovation Skills
And Knowledge

<table>
<thead>
<tr>
<th>Advanced</th>
<th>Intermediate</th>
<th>Basic</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Introductory</td>
<td>Business Core Principles</td>
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<tr>
<td></td>
<td>Freshman</td>
<td>Sophomore</td>
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<td>Junior</td>
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<td></td>
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<td>Senior</td>
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</table>

Capstones
Upper-level electives
Majors/Minors

Academic Year

Figure 1: Conceptualizing the Integration of Innovation into an Undergraduate Business Degree

Outcomes Assessment
Integrating innovation goals into the core curriculum will require subsequent assessment of students’ success in achieving the stated learning. The IIT outlined preliminary learning or program goals. However, it is necessary as we develop this into a broader effort to ensure that our faculty support these goals. The first draft of undergraduate learning goals includes:

- Systematically develop a foundation of innovation skills and knowledge with few or no gaps
- Progress to the advanced skill and knowledge levels in all key areas
- Experience innovation concepts across various disciplines
- Develop knowledge needed to recognize, promote, and develop innovation within teams, departments and organizations
- Understand individual and group level innovation skills
- Develop a mindset of innovative thinking and continuous improvement

Measurement tools will need to include assessments of skill, knowledge and attitudes. Developing interim performance standards will allow students to understand their progress through the levels of beginner and intermediate as they work toward achieving expertise as defined within their program.

To this end, the final framework the IIT created, but deliberately left unfinished, includes the aspects of innovation at the individual, group, and organizational levels, grouped by the two organizing categories we previously identified, and set up to have descriptive performance standards at the beginner, intermediate, and advanced levels (see Table 2). The plan is to recruit a larger group of faculty to complete this assessment rubric, which can then be used as a guide for courses, within majors, and across the overall degree.

Business School Culture Supports Innovation Initiatives
The Business School already has several non-integrated innovation educational initiatives in place. To encourage faculty acceptance of innovation as the underpinning of the entire curriculum, the IIT will need to show how each either supports or reinforces the innovation integration initiative.

The first is an annual New Product Innovation competition that involves teams of students who develop new product concepts and commercialization plans and present their proposals to panels of experienced entrepreneurs, venture capitalist and angel investors. Last year over 250 new product proposals were generated by Suffolk university student teams.

The second effort is the annual Global Leadership in Innovation and Collaboration Recognition Day, which is hosted by our Center for Innovation and Change Leadership. The recognition day provides an opportunity to learn
best practices from a globally innovative firm’s top executive or innovation officer. That individual spends the day at Suffolk sharing best practice challenges and best practice solutions with faculty, students, alumni and invited guests in a variety of venues.

Third, our undergraduate entrepreneurship major provides the foundation for students to launch ventures, and will be expanding to help participants in the New Produce Innovation competition take their ideas to execution (I2E) thus converting these innovators into entrepreneurs.

Fourth, a required sophomore experience around leadership and social responsibility has teams of students develop new solutions to real challenges faced by local not-for-profit organizations. Other courses across the curriculum include similar experiential and applied problem solving opportunities for innovation integration.

Next Steps
The execution of the above innovation integration project activities is intended to strengthen the Business School’s competitive position and reputation (brand) as an institution committed to innovation integrated business education. The full realization of the innovation integrated curriculum initiative will require the development of the Innovation integration assessment approach into an operational tool for transforming the business school curriculum and its faculty and students into effective innovation integration co-learners. This process will require a sustained set of activities that include the development of a repository for best practices of innovation pedagogy and instructional content, a systematic assessment of current gaps in innovation pedagogy across the curriculum, a set of educational initiatives to develop faculty competence and commitment to innovation integration within their disciplinary courses, and a set of student orientation programs to alert them to the role of innovation in their educational experience at Suffolk and its value to their post Suffolk careers. Finally, the Sawyer Business School will need to support these initiatives internally as well as to market and promote these initiatives externally as part of the business school’s distinctive branding of its educational offerings.

References

Acknowledgments
The authors would like to acknowledge the other members of the Sawyer Business School Innovation Integration Team: Associate Professor Ken Hung, Executive in Residence Sushil Bhatia and Center for Entrepreneurial Studies Director George Moker. We also thank Dean William O’Neill for championing innovation education at the Sawyer Business School. Suffolk’s Center for Teaching Excellence and the Sawyer Business School provided financial support of this project through the Teaching and Learning Innovation Grants program (Tealigs).
Table 1: Initial list of Innovation skills and knowledge

Individual Level
I1: Creative thinking skills (brainstorming, idea elaboration, developing the unexpected)
I2: Mindset of continuous innovation/improvement (what can we do differently/better?)
I3: Develop forward thinking mindset, what’s the next thing?

Group Level
G1: Collaborative/group decision making skills (how to spur creative open thinking, encouragement)
G2: Need to build coalitions, support for changes, understand buy-in
G3: Awareness of groups/others affected by change/innovation and need to help them before/after

Organization Level
O1: How to build a culture of innovation, sustain creativity
O2: Awareness that innovation leads to disruption/system change; needs to be managed/planned
O3: Inter-Organization: Vertical and Horizontal Partnerships Alliances and Networks
O4: National Systems of Innovation
O5: Sectoral Systems of Innovation
O6: International/Global Innovation
O7: Innovation Strategy
O8: Virtual Innovation Teams and Virtual Innovation Networks
O9: Innovation Planning Tools
O10: Product Development and Product Portfolios
O11: Innovation as Decision making under uncertainty
O12: Innovation as Risk Management
O13: Users as Innovators and Co Creators of Value
O14: Innovation by Observation
O15: Innovation as Entrepreneurship
O16: Public and Private Returns from Innovation
O17: Innovation as a knowledge creating and learning tool

Table 2: Innovation Rubric
<table>
<thead>
<tr>
<th>Innovator Mindset and Skills</th>
<th>At the beginner level...</th>
<th>At the intermediate level...</th>
<th>At the advanced level...</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Indiv 1</strong> Creative Thinking Skills</td>
<td>Students identify and attempt to use various techniques to complete class assignments or exercises.</td>
<td>Students successfully apply these techniques to complete structured classroom projects.</td>
<td>Students successfully apply these techniques to complete applied, less-structured projects.</td>
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<tr>
<td><strong>Indiv 2</strong> Recognition of Opportunity or Disruptive Innovations</td>
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<td><strong>Indiv 3</strong> Idea Evaluation and Enhancement</td>
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<td><strong>Indiv 4</strong> Continuous Improvement Mindset</td>
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<td><strong>Group 1</strong> Collaborative/group decision making skills</td>
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<td><strong>Group 2</strong> Building coalitions and support for changes</td>
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<td><strong>Group 3</strong> Intra- and inter-group effects of innovation</td>
<td>Students are aware of the effects of human innovation and the need to help them before/after</td>
<td>Students identify strategies, policies, and plans to manage the effects of change/innovation</td>
<td>Students implement strategies, policies, and plans to manage the effects of change/innovation</td>
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<tr>
<th>Innovation Process and Skills</th>
<th>At the beginner level...</th>
<th>At the intermediate level...</th>
<th>At the advanced level...</th>
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<tbody>
<tr>
<td><strong>Org 1</strong> Planning and managing disruption/system change</td>
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<tr>
<td><strong>Org 2</strong> Decision making under uncertainty in innovation</td>
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<tr>
<td><strong>Org 3</strong> Building organizational cultures that sustain innovation</td>
<td>Students can identify aspects/ dimensions of organizational culture that support innovation</td>
<td>(continue to fill each cell in with specifics)</td>
<td>(continue to fill each cell in with specifics)</td>
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<td><strong>Org 4</strong> Organization learning for sustainable innovation</td>
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<td><strong>Org 5</strong> Innovation strategy</td>
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<tr>
<td><strong>Org 6</strong> Virtual innovation teams and virtual innovation networks</td>
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<td><strong>Org 7</strong> Managing risk in the innovation process</td>
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Do we lose the vision of a long term strategic profit making?

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Abstract: This paper examines the issue of the 2008 – 2009 financial crisis and the role of business school education within this crisis. In order to develop a rough understanding of the current business school curriculum, the web sites of the top ten World business school (as identified by Financial Times survey of the top 100 MBA programs worldwide) were examine in term of their inclusion of public policy or explicit treatments of current financial crisis. As can be seen, none of the schools pay considerable attention to a possible link between public policy and private corporate management, and few have even elective courses that allow for exploration of this issue. This paper analysis has yielded a wealth of information regarding the potential benefits of specific improvements that may not prove to be effective within this context. This report have emerged recommendations including the strengthening of the basic business school curriculum to enhanced microeconomic and macroeconomic knowledge, integration of alternative organizations and public policy awareness to the existing curriculum, and an increased stakeholder perspective intended to offset the neo-liberal bias of business schools.

Introduction
The September 2008 failure of the venerable Lehman Brothers investment house was the largest bankruptcy in US history to that time, with $613 billion in debt being declared by the firm in the filing as compared to $639 billion in total assets (Mamudi). This bankruptcy has come to be emblematic of the failure of the markets during the 2008-2009 financial crisis. It was steeped in concerns about bank failure, the global banking structure, and the underlying soundness of the neoliberal economic and business philosophy. On the larger scale, the company’s bankruptcy filing served as a wake-up call for politicians and governments. The failure of Lehman Brothers resonated through the markets, causing shares in the Reserve Federal Money Fund to fall below $1 a share, causing a drop of 300 points in the US stock markets, and more importantly spurring action across the US government structure (St. Louis Fed). Rapidly following the September 15 bankruptcy filing of the Lehman Brothers bank, the SEC (Securities and Exchange Commission) placed a ban on short-selling stocks of financial sector stocks in order to prevent a further recurrence (St. Louis Fed). The Fed also began to take action, at first increasing existing swap lines, then extending additional funds, and engaging in other actions intending to stem the flow of potential failures from banks that were deemed too big to fail (St. Louis Fed). Although banks began to finally report profits in the April 2009 quarter, these profits were primarily due to one-time charges, changes in financial reporting or other non-repeatable events rather than increases in operating income or reduction in losses (Sorkin) After over a year of concerted effort, including several bailouts, rule changes, and other adjustments in US and world markets, the global financial industry has begun to regain a shaky equilibrium. However, the damage that has been done to global financial markets, as well as the lives and livelihoods of millions of people around the world, remains, as does one pressing question. What have business schools done to prevent a recurrence in those they are training to take control of the next generation of banks, financial markets, and businesses? Are the lessons learned during this crisis being applied to the training of new business professionals? What is the eventual role of business school training in preventing a further recurrence of this disaster? This essay examines the interaction of business training and public policy training and examines how the issues raised by the global financial crisis, including risk management, corporate governance, and public policy, can be integrated into the business school curriculum.

The Business School Curriculum
The current business school curriculum is not the subject of extensive study in the literature. Although there has been some attention paid to the issue of business school curricula, most of the literature available is focused on the role of ethics and corporate governance rather than explicitly on the curricula. Although this information is important (and will be discussed below), it does not directly answer the question of what business schools are currently teaching. In order to develop a rough understanding of the current business curriculum, the Web sites of the top ten UK business schools (as identified by the Financial Times survey of the top 100 MBA programs worldwide) were examined in terms of their inclusion of public policy or explicit treatments of the current financial crisis. (At the time of study, these universities and programmes included London Business
School, University of Cambridge Judge Business School, University of Oxford Said Business School, Lancaster University Management School, Manchester Business School, Cranfield School of Management, Warwick Business School, Imperial College Business School, University of Strathclyde Business School, and City University Cass Business School (Financial Times). Of these programs, all had corporate social responsibility and corporate governance courses built into the curriculum. However, only a very few of the programs had available any type of public administration or public policy courses. The Manchester Business School did include a specialist Master’s in Public Administration (MPA) (Manchester Business School). The Warwick Business School also offered an MPA program (separate from its MBA program) which provided public administration information (Warwick Business School). Finally, Cass Business School offers a series of specialist masters programs (MSc programs) which are focused on non-profit and NGO management (Cass Business School). As can be seen, none of the schools pay considerable attention to a possible link between public policy and private corporate management, and few have even elective courses that allow for exploration of this issue. Although the available course materials do not make clear how much influence the current financial crisis has had on the curriculum, there are no modules listed on any of the sites that specifically address this possibility. Thus, although this information may be integrated into existing modules, there is no indication that this is the case.

The Curriculum and Its Problems

Compared of other levels of education, the curriculum of the graduate business program does not receive much attention (except in terms of its inclusion or exclusion of controversial topics such as business ethics). The business school is often seen not as a place to form knowledge, but simply to disseminate it to students; Knights remarks, “some conventional wisdom would see the business school as having the potential to become a leading site of knowledge production and dissemination, education or professional training just so long as it is responsive to the changing contours and processes of an increasingly demanding public within a ‘knowledge-based economy. For this to occur, however, they will have to reinvent themselves (Knights 89).” That is, the business school does not currently stand as a significant force in the production or dissemination of knowledge. Instead, business schools tend to follow a set curriculum that focuses on specific structures and formats that constitute a preformed understanding of the realm of business knowledge (Knights 91). This information primarily includes introductory economics and statistical information, followed by pragmatic business information focused on marketing, accounting, and strategy setting, according to Knights. Although most business programs do include a business ethics module or course in response to previous ethical issues within business (in particular the major corporate scandals of the late 1990s and early 2000s), there is a relatively light treatment of other business systems or other areas of knowledge, and little active knowledge production (Knights 92).

One of the major deficiencies found in the business school curriculum by the current research is in economic literacy (a basic prerequisite for understanding the causes and effects of the current financial crisis) (Koshal, Gupta and Goyal 43). Koshal, Gupta and Goyal’s economic literacy assessment of Indian MBA students in the United States found that these students (drawn from two top-ten schools and three other schools), had an average score of 64.1% (24 out of 37 questions correctly answered) (46). However, this was balanced by a distribution which included 52% undergraduate economics majors, and the lowest score was 13.5% (Koshal, Gupta and Goyal 46). This was actually lower than a general population study conducted by the National Council on Economic Education, which examined 3,512 US adults for general economic knowledge (Koshal, Gupta and Goyal 46). The economic literacy scores within the study indicated some variation; for example, students in top business schools scored higher than those in other schools, males scored slightly higher than females, and those from engineering and business and commerce backgrounds scored higher than other backgrounds (Koshal, Gupta and Goyal 47). Contrary to expectation, students who majored in economics had a slightly lower average score (62%) than those who did not major in economics in undergraduate education (65.8%) (Koshal, Gupta and Goyal 47). Although this study was conducted on Indian students, it is not likely that the undergraduate curriculum within their native universities was poor enough to occasion a significant drop in economic knowledge. However, this study indicates something of high importance to the business school curriculum – that it cannot be assumed that the postgraduates admitted to these programs will have an appropriate level of economic knowledge to understand the causes and effects of the current crisis or be able to integrate this knowledge into existing theoretical or practical information. This is clearly a significant problem that must be addressed within the curriculum if the mistakes that were made during the 2007-2008 financial crisis are to be avoided.

Another area of business that should be examined is that of corporate governance and corporate ethics. In most cases, it has not been proved that the business leaders acting during most of the worst excesses of the 2007-2008 financial crisis were acting out of deliberate malice; however, it has been observed by many researchers and analysts that a lack of consideration of business ethics and corporate governance issues has played a role not only in the current crisis, but in scandals dating back at least to the US S&L scandals of the
1980s, and certainly including the scandals such as WorldCom, Tyco, and Enron in the late 1990s and early 2000s (Kennedy and Horn 77). Unfortunately, the integration of increased business ethics and corporate governance information in the business school curriculum was not reflected in the outcomes of the 2007-2008 financial crisis; although, to be fair, this increased focus (enacted only in the mid-2000s) was not integrated early enough to increase the amount of ethical knowledge in use at the top levels of the organization. However, the lack of this type of reflective curriculum can be seen in the collapse of the Northern Rock bank following its announcement of support from the Bank of England and subsequent support, one of the earliest signs of crisis in the United Kingdom (Shin 101). The Northern Rock bank experienced the first bank run in the United Kingdom since 1866, exposing a drastic shortfall not only in banking insurance coverage for depositors, but also drastic shortfalls in the basic premises of management that had been used within the bank (Shin 101). This premise was the idea of the short-term return, in pursuit of which the bank managers had become heavily invested in short-term nonretail funding and an excessive reliance on the short-term lending pool that US subprime mortgage securitizations were involved in; increasing difficulty within this market led to a sudden loss of short-term funding from the bank, and the bank, which had run a short reserve, was caught short when retail depositors began to withdraw their funds (Shin 102). In this case, it is the focus on short-term funding and profits, rather than the precise way in which the funding was pursued, that should be the focus of improved ethical examination in this area. Many researchers, including Knights, Kennedy and Horn, and Rubin and Dierdorff, have remarked that business ethics education within the business school environment does not question the basic underlying model of business; questioning this basis could lead to improved outcomes in terms of longer-term stakeholder views.

Unfortunately, other areas of the business school curriculum may also not provide the background required to students in order to allow them to integrate this information. Rubin and Dierdorff note, “recent critics content that the MBA is wholly out of touch with the “real world” and the needs of practicing managers. More specifically, these criticisms appear to converge rather clearly on a single pressing issue confronting contemporary graduate management education: relevancy (Rubin and Dierdorff 209).” Rubin and Dierdorff examined the module content of MBA programs offered at 373 United States schools accredited by the AACSB. These courses were then classified according to six identified competency categories which were derived from research regarding the current areas of required knowledge for management in the active business environment (Rubin and Dierdorff 214). The findings of this study indicated that coverage of the identified competency areas varied widely; managing logistics and technology received a percent-coverage benchmark of only 10.61 as compared to the highest scoring management-decision making processes, which received a percent coverage benchmark of 19.66% (Rubin and Dierdorff 214). The findings also found that of universities, there was a wide range of coverage of courses within specific areas; for example, 64.88% of universities within the study had only a single course offered in the managing human capital competency category; managing decision making processes (52.28) and managing strategy and innovation (55.50%) fared almost as badly (Rubin and Dierdorff 215). This indicates that there are significant gaps between the market expectations of MBA graduates and the actual content to which they are being exposed. (At least, this is the case in the United States; there is no similar research available in the context of the United Kingdom, although business school policy and curriculum is very similar between these two countries). This study is echoed by research by Clinebell and Clinebell, who note that the constant conflict between academic rigor and the sort of real-world training that is considered to be appropriate in management training can often cause significant gaps in training. Although an approach of using executive professors, or real-world executives who teach part-time in the academy, is presented as one way in which this difficulty can be rectified, it is not clear that the use of executive professors actually does much good in this setting (Clinebell and Clinebell 103). Thus, even excepting the problem of public policy and financial understanding, business schools are already not teaching the material required to make effective managers of their students, and it is not clear how this information can be effectively introduced in the current setting – this, plus the emphasis on putative real-world training, means that students have neither the academic nor the practical knowledge needed to overcome the challenges of modern business.

A different view can be gathered of the business school curriculum from Bohanon’s discussion of curricular themes. Bohanon’s themes, which emerged during the period of 1900 to 1930 (the start of formal business education in the United Kingdom and the United States) and many of these themes continue to be the focus of the modern business curriculum. One element of this development has not held consistent however; whole Bohanon (240) notes that early development included an emphasis on economics and the social sciences, focus on economics has shrunk while in many cases social sciences (including organization development and other areas of applied social sciences) has grown. However, the debate regarding corporate social responsibility, which emerged early within the discussion of the appropriate curriculum for business schools and one which is highly relevant in this case, has remained a constant feature of business school curriculum debates (Bohanon 243). However, Bohanon does not indicate a strong basis in the early development of business schools for promotion of long-term understanding of capital development, markets, and financial crises (although to be fair, during the period which Bohanon was discussing the understanding of these events was relatively limited in and
of itself). However, it should also be considered that business school curricula and the knowledge contained within them do not stay consistent, but rather change over time as new theoretical and practical frameworks are identified (Dosi, Faillo and Marengo 1179). For example, the development of core capabilities was not immediately integrated into the business curriculum, but only began to appear after the capability-based view of the firm (which focuses on specifically human resources while developing a resource-based view) was accepted within the business literature (Dosi, Faillo and Marengo 1179). Thus, the lag between occurrence (whether this is a real-world occurrence or emergence of a theoretical framework) is one way in which the curriculum is controlled in order to provide time for the analysis and understanding of the material before packaging and presentation to students. This is a point that should be considered carefully in this case; as the financial crisis, although it has abated, is still ongoing, it is difficult to determine whether this is an appropriate inclusion for the curriculum of a given business school in-depth at this time.

Is Accreditation the Answer?

As noted above, the business school curriculum is not guaranteed to include either important theoretical knowledge, such as an understanding of economic principles, or important practical knowledge such as human capital management – it does not even address the issue of public policy, and both graduate and post-graduate treatment of non-profit management is weak. This could be addressed using a more consistent curriculum development and standardization process. Unlike other areas of professional practice such as medicine or law, there is no formalized central accreditation body for business schools to enforce quality and curriculum. This lack of central oversight, which means that business schools are generally covered by the accreditation of the university of which they form a part, means that there is no way to centrally examine quality of the education being provided. Is accreditation a means to move forward in ensuring business school quality? The American accreditation board AACSB (Association to Advance Collegiate Schools of Business) may provide a template for integration of accreditation into the UK system of business schools – however, its actual standards fall far short of the requirements for prevention of further damage to the global finance system. The AACSB accreditation standards include strategic management standards (intended for the management standards of the school itself, rather than for the curriculum); continuous improvement of the school offerings; and curriculum management (AASCB). The AASCB standards do have specific knowledge and skill areas which must be addressed within the curriculum of an accredited business control. This includes the following general skills – “communication abilities; ethical understanding and reasoning abilities; analytic skills; use of information technology; dynamics of the global economy; multicultural and diversity understanding; reflective thinking skills (AASCB 71)” – as well as management specific skills including “ethical and legal responsibilities in organizations and society; financial theories, analysis, reporting, and markets; creation of value through integrated production and distribution of goods, services, and individuals… domestic and global economic environments of institutions (AASCB 72).” Thus, the AASCB standards do provide the appropriate level of control of curriculum that could improve business school response to the type of situation presented by the 2007-2008 currency crisis, by emphasizing inclusion of both ethical understanding, general economic knowledge, and domain-specific economic knowledge.

However, as the AASCB accreditation program is voluntary, it cannot be used as a full model of effective management of the curriculum to include awareness of issues involved in the current situation (AASCB). Although this could be overcome by simply modifying a British accreditation program to be mandatory (or to privilege accredited schools over unaccredited schools), there is a more serious problem with the AASCB accreditation model. Specifically, there is no evidence available within the literature that it actually improves the understanding of the economic situation or reduces tendency toward risky behaviours. In fact, the universities included in much of the research were specifically AASCB accredited universities (Koshal, Gupta and Goyal; Hodge and Greve). Thus, the use of accreditation cannot be looked to as a fix for the gap in knowledge, although it may be a useful tool to standardize curriculum and improve the application of business school knowledge to the real world.

Interaction with Public Policy

One major criticism of the current business school curriculum is that it does not involve significant public policy components generally; although there are sometimes program tracks focusing in nonprofits or public policy management within a business school where students may be offered course material pertaining to this area, it is not a general characteristic of the curriculum. There is also little evidence of the discussion or understanding of the public sector or public policy in undergraduate education, according to a case study from the Netherlands (Meijis, Ten Hoorn and Brudney 80S). Thus, it cannot be presumed that students will have an appropriate education in public policy based on their undergraduate education. It stands to reason that there are, and should be, differences between business and public policy education. For example, research has indicated that even though there are many similarities between the leadership styles, tasks and roles of the non-profit and for-profit leader, there are also many differences (Thach and Thompson 356). In an examination of 23
leadership competencies in Thach and Thompson’s study, the top three competencies (honesty and integrity, being collaborative, and developing other) were consistent between public or non-profit and private corporate leaders (Thach and Thompson 363). However, from that point the rankings diverged; however, in both cases accounting and finance were ranked near the bottom (with for-profit leaders ranking this competency at 20 and non-profit leaders ranking it at 19). This indicates that basic finance is not an issue that plays a significant role in the training and development of business skills for leaders, either corporate or non-profit — thus, even integration of public policy knowledge may not increase the ability of the corporate leader that emerges from an MBA program in regard to large-scale economic issues. There are also conflicts between the current business school curriculum and focus and recommendations for public policy. For example, many business schools focus on entrepreneurship as a means of economic development (Clinebell and Clinebell 102), and this is seen as a core competency of business schools. However, economic and public policy research suggests that this is actually an inappropriate focus (for both business schools and public policy makers) due to a simple fact: most individuals do not have the creativity, innovative ideas, or drive required to make a successful high growth business (Shane 141). Shane’s analysis convincingly argues that the current public policy stance regarding entrepreneurial activity is misguided, due to the high failure rate and low employment rate, as well as low growth rate, of most entrepreneurial businesses; instead, he states, finding ways to start or increase the efficiency of a few high-growth businesses will be a more effective way to develop the business capabilities of a given person or group of people. Thus, business schools and public policy have a common ground in this regard, and this should be considered when examining the appropriate approach to entrepreneurship. This is just one example of congruent interests and areas of study between business and public policy.

There is evidence within the literature for supplementing management education with supporting or complementary disciplines such as public policy. For example, Learmonth and Reedy examined the contribution of widening the business school curriculum in order to encompass more than the current standard of neoliberal economics and organization. They remarked, “We believe that, within most business schools at the moment, the normative western values of competitive individualism are typically encouraged, in some cases even before students set foot within them. For example, in promoting themselves to potential students, business schools typically construct the value of management qualifications solely in terms of their ability to confer competitive advantage in the pursuit of individual wealth, status and power (Learmonth and Reedy 242).” This leads to a focus within business schools solely on profit and shareholder advantage (the Anglo-American business model); while the authors do acknowledge that corporate social responsibility and business ethics are discussed within this structure, it is rare that business schools actually address the underlying ethics of the profit motive (Learmonth and Reedy 242). Learmonth and Reedy see the introduction of alternative organisations – that is, alternatives to the neoliberal form of organization which focuses on radical individualism, such as the cooperative movement or other alternatives – as one way in which the business school curriculum could be widened in order to promote healthier development of organizational models (Learmonth and Reedy 244). The authors also suggested that business schools do not need to overwhelmingly emphasize the maximization of profit as the sole purpose of business; instead, focuses such as public or social entrepreneurship (in which there is another goal than profit maximization) or even self-sufficiency or individual autonomy, can take a role in the planning and execution of business plans (Learmonth and Reedy 244). These types of alternative organizations, such as the Mondragon Corporacion Cooperativa, worker’s co-operative network established in the 1950s and now consisting of 228 different cooperatives in the Basque region of Spain, can provide alternative views and ideas of what the motivations and methods of business should be (Learmonth and Reedy 248). However, under a specific understanding of the alternative organization, the public sphere could be considered to be a type of alternative organisation that could be covered under these recommendations. This is due to the different purpose of the political and public sphere (such as increasing material well being, ensuring human rights, or other purposes, which differ from organisation to organisation), as well as the differing social, commitment and hierarchal structures within these organisations. The authors suggest that, rather than addressing alternative organizations outside the existing curriculum, there should be integrated into existing materials, in order to ensure that these can be considered to be part of the main curriculum (Learmonth and Reedy 252). The authors also suggest that the use of alternative organisations as a learning tool could lead to a better understanding of the social issues and impacts of their business decisions, which would be ideal for the introduction of the issues involved in the 2007-2008 financial crisis.

The extension of the business school curriculum to the public policy realm also raises the question of whether this would lead to improved public-private partnerships. The public private partnership is a partnership between governmental bodies and private sector organizations, and are commonly used to engage in activities where private sector organizations may be seen to be more efficient in a given area due to specific delivery efficiencies, increased skill, or other improved areas of efficiency (Hodge and Greve 546). (There can of course be other reasons for public-private partnership, such as a commitment to business development or a desire to drive employment within an area). The current research indicates that there are some conflicting results regarding the effectiveness of the public private partnership (Hodge and Greve 546). Hodge and Greve focused
on public-private long-term infrastructure projects, one of the most commonly used areas for public-private partnerships worldwide, in order to identify the overall successfulness or unsuccessfulness of this type of partnership. They found that there is no clear agreement within the literature regarding the success of these type of partnerships; while much success could be found in this area, there were also a high degree of failures reflected within the literature, due to specific issues such as budgeting, planning, and organisational conflicts between the public and private actors (Hodge and Greve 552-553). Ultimately, they concluded that there was simply not enough research on public-private partnerships to provide a robust estimate of the potential for effective application of private enterprise models to public works projects. Thus, integrating public policy and administration knowledge into the business school curriculum could help to enhance the overall effectiveness of business as well as integrating a long-term view of profit handling and appropriate business methods.

Recommendations

This analysis has yielded a wealth of information regarding the potential benefits of specific improvements to the business school curriculum that could help prevent a repeat of the 2007-2008 financial crisis. It has also introduced a few alternatives that may not prove to be effective within this context. Overall, there is significant evidence that integrating public policy and administration knowledge into the business school curriculum, along with enhanced economics, understanding of alternative organisational forms, and more in-depth business ethics and corporate governance knowledge, could provide an improved business curriculum that would help the students avoid the ethical and management issues of the past and help to mitigate the possibility of a repeat of the 2007-2008 currency crisis. However, there is no particular evidence that an accreditation program (or at least, a voluntary accreditation program in the model of the AACSB) would be beneficial in increasing performance. Specific recommendations for the business school curriculum are addressed below.

Curriculum Enhancements

The major area of recommendations for this discussion is in academic improvements to the curriculum offered within business schools. First, there were a few areas of basic lack of knowledge displayed by some students which must be addressed; specifically, the issue of basic economic knowledge. It is essential that business students and graduates should have a firm grasp on the concepts of economics in order to allow them to effectively manage businesses and not engage in inappropriate economic behaviour. Thus, the improvement of basic and advanced economics curricula is suggested.

Second, there is the issue of the focus on neoliberal economic and organisational forms which has overtaken many business schools, if not most. This will be addressed in two ways. First, the consideration of alternative organisational forms (at least including economic co-operatives and public and non-profit organisations) should be taken seriously, and these alternative organisational forms should be addressed in a way that emphasizes the goal of reducing short-term profit seeking behaviour. This should be accompanied by a reduction in pre-enrolment and post-enrolment emphasis on personal gain and individualism and increased emphasis on other goals of business such as achieving a specific social good.

A third recommendation is that an integration with a public policy curriculum should also be pursued in order to allow students to understand and integrate understanding of the political and non-governmental actions involved in the market. This would reduce the emphasis on individualist neoliberal economics, and would also increase the potential for effective public-private partnerships. However, this integration of public policy knowledge would most importantly provide students with an increased understanding of the global nature of business and its connections with the public sphere.

Finally, material explicitly concerning the missteps that led to the 2007-2008 financial crisis should be integrated into the curriculum as this information becomes available. This is expected to be a matter of ongoing research and debate over a long period of time, and as such specific theories do not need to be addressed until they have been fully examined. However, the consideration of these theories can provide students with an increased understanding of why it is important to cultivate alternative motivations and longer-term time horizons for their own leadership exercises, as well as providing practical lessons on issues like risk management, corporate governance and ethics, and other important areas of knowledge. However, it should not be expected that this will be effective immediately in terms of prevention of future economic unrest – as with the scandals of the early 2000s, it will take time for this information to be fully integrated into the active business world.

Accreditation

This report did not yield significant evidence that accreditation as modelled by the AACSB has proved to be effective in making the changes required in the UK business curriculum. In fact, research demonstrated that students at AACSB-accredited universities were no more informed in terms of basic issues for prevention of
further economic distress. The program was also voluntary, limiting its effectiveness. Although an accreditation program may be desirable for general improvement of business school curricula and outcomes, it is not considered to be effective in this case. Thus, this is not recommended.

**Time Period**

As might be imagined, the 1-year business school program is already an exceptionally busy year that many students may have trouble integrating. The researcher feels that by adding an additional requirement for enhanced understanding of economics and ethics and corporate governance, as well as the integration of a public policy component to the business school structure, it will prove to be overwhelming for many more students. The researcher proposes that an addition of a second year to the business programme would be beneficial for students, who would have more time to study and absorb information before returning to the workplace to practice these skills. This would allow the business school curriculum more time to develop an understanding of business that could be used to improve outcomes and increase the responsible governance of large corporations by the business leaders that emerge. The 2-year curriculum is commonly used within US business schools, with core modules occurring within the first year and elective modules occurring in the second. This structure could be very beneficial to British students as well. Thus, the final recommendation of this report is that in order to accommodate the changes made in the curriculum structure and emphasis, that the MBA program timeline should be extended from one to two years.

**Conclusion**

This paper has conclusively shown that the current business school curriculum is not sufficient for creating a full understanding of the climate of global business and the ways in which it can fail. Instead, the future business leaders currently enrolled in graduate business programs are probably still learning many of the same failed strategies that their predecessors were taught. Most business schools also continue to not emphasize a connection between business and public policy, allowing for a continued lack of understanding of how the civil and governmental spheres interact and influence each other. It is essential that these problems should be rectified immediately in order to prevent, as far as possible, a recurrence of the current conditions of global financial crisis. The recommendations provided by this report will allow for business schools to modify their curriculum in order to provide the business world with more qualified future leaders who understand the importance of placing sustainable growth over immediate growth. The introduction of a second year to the business school curriculum is sure to prove controversial for both schools and students enrolled in these schools. The intensely pragmatic education stressed within the business school environment, and the focus on cost and time efficiency, is likely to moderate against adoption of this suggestion by both schools and students. However, it is well worth considering that effective development of human capital is one of the first steps in effective development of the modern business – thus, it is worth the time to train business leaders appropriately in order to ensure that they can continue to guide business through such difficult periods without making the same missteps that their predecessors faced. Even though GDP is beginning to return to normal, house sales are picking up and in general the economic situation of both the United Kingdom and the world is a cheerier picture overall, this is not to indicate that there should be a reduction in concern regarding the potential for a repeat of this incident. Instead, business schools should assume that a potential market failure of this magnitude will happen again, and begin to train their graduates to work with public policy and longer term economic information in order to help prevent this recurrence.

**References**


The title of Stuart’s presentation is "Crossing the Border Between Economic and Social Engagement: The Future Tasks of Higher Education". It is now a commonplace that a key responsibility of a 21st century university is to support closely the economic and business needs and development of its host country - although there remains much debate and less certainty about the most effective means and the sources of funding to achieve this. It has been until very recently less common to see similar attention paid by universities to the broader and more diffuse domains of social activity (outside the formal wage-labour economy) which also contribute massively to the quality of our material existence. The presentation will argue for a position and forms of practice which constitute a continuum across these forms of economic and social engagement – and which should form a core purpose of universities over the next half century.
Main purpose of the study
This study provides a literature review on learning and knowing and investigates the relationships between social change (Volberda, 1999), learning schools (Ormond, 1999; Marquardt, 2004) in adult learning, social learning design (Dewey, 1916; Bandura, 1977; Bandura 1986; Lave & Wenger, 1990; Wenger et al., 2002; Thijssen, Maes & Vernooy, 2002) and social quality (Nussbaum & Sen, 1993; Van der Maessen & Walker, 2005). From this literature review, a theoretical framework is composed with 6 propositions that may explain the role of the public social service sector in the Netherlands in combating poverty and social exclusion and generate input for social learning design of interventions. This framework describes the relation between the social service organisation, the client’s life world, the client’s effects from social learning and measurement of these effects in terms of the level of inclusion.

The study underlines the shift from an epistemology of ‘possession’ to one of ‘practice’ where knowledge and knowing are co-constructed in socially oriented processes of collaborative or social learning. This is what Bruner and Haste (1987) more than two decades ago called the ‘quiet revolution’ in the study of learning and the mind. This ‘revolution’ overturned the previous dominant model which implicitly conceptualized learners as individual actors processing information or modifying their understanding, and substituted it with an image of learners as social beings who construct their understanding and learn from social interaction within specific socio-cultural and material settings (Bruner and Haste, 1987; Edmondson, 1999).

Theory on learning
Today there appears to be a broad acceptance of various levels of analysis in learning research (Crossan et al., 1999). The emergence of new approaches yielded a different perspective on the levels debate. The social constructivist perspective starts from the assumption that learning occurs, and knowledge is created, mainly through conversations and interactions between people.
This produced a shift from an ‘epistemology of possession’ to one of ‘practice’ with respect to the themes of knowledge and knowing (Cook and Brown, 1999) and introduced a stronger emphasis on socially oriented approaches to the understanding of learning and knowing. One of the notable consequences is the emergence of new units of analysis such as ‘communities of practice’ (Lave and Wenger, 1991), ‘activity systems’ (Engestrom and Middleton, 1996) and ‘ecologies of knowledge’ (Star, 1995).

Research setting and data sources
The research setting is a longitudinal research in combating poverty and social exclusion in the Netherlands (Thijssen, 2010) through social learning in an entrepreneurial way by public social service organisations. Previous research in the Netherlands describing innovative interventions in the social service sector is reported on. From these findings and the literature review 6 propositions are generated that aim to explain the effects of social learning interventions. In the full research paper these propositions are fully explained and applied in a base line study of N=31 client interviews to better understand the clients life world and the role of the public service organisation. The conceptual model is pictured in figure 1 below. (Figure 1 not included).

Formulating propositions to be tested.
On the role of government operated social service organisations in the Netherlands in combating poverty and social exclusion, we can formulate 6 propositions:
P1: When social service organisations engage in social learning with clients in a situation of poverty through dialogue, as a participatory approach to combat poverty, social quality will increase.
P2: Exchange and combination with clients in a situation of poverty increase social quality.
P3: Increasing access to resources will increase the social quality of an individual’s life.
P4: Sharing values and norms including trust, enable more effective building of social relations.
P5: Social inclusion by institutions and social networks will increase the integration and enhance the social quality of an individual’s life.
P6: The capabilities of individual people and their ability to act are positively influenced through social empowerment.

Findings and implications
Respondents confirm that they have little trust in institutions to help them solve their predicament. Trust being defined as a key facet of relational capital (Nahapiet & Ghoshal, 1998). Relationships are seen as part of social capital and as a resource for social action. Nahapiet & Ghoshal (1998) define social capital as the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital comprises both the network and the assets that may be mobilised through that network.

The problems of the 31 people in poverty in this study, are plenty fold ranging from lack of education, health and relational problems (divorce and exclusion from social support networks) as well as exclusions from integrated support through lack of coordination and communication between institutions. Perhaps the most important problem to deal with is the mindset about people in poverty as a ‘write off’ and the lack of time and attention invested in getting to know the individual person, his/her history, qualities, network and aspirations. This study 1 confirms that out of 31 respondents 13 are fully excluded (situation A), and 18 are somewhat excluded or somewhat included (situations B and C). Exclusion can indeed be defined in four basic dimensions of (1) Income, (2) Type of exclusion, (3) level of exclusion and (4) time or duration of exclusion as proposed by Vranken et. al. (2005).

Implications are that social learning design principles should include the role of trust in establishing relational quality between the public service organisation and the client. First indications are that trust and empowerment may enable clients in a situation of poverty and social exclusion to take charge of the design of their own lives and construct and co-construct it accordingly.

These findings provide a base line measurement for a time series design on the effects of social learning on social inclusion in the Netherlands from 2001-2008.

References
Tri-partnerships in Knowledge Transfer: supporting 3rd age entrepreneurial venture creation and development

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Almost every national economy uses knowledge-intensive activities to contribute to: supporting its core business sectors; helping to accelerate their national technical and scientific advantage; and fundamentally developing a knowledge economy. Increasingly, these businesses are being managed and driven by entrepreneurs who are over forty-five years of age, over 67% of all SMEs. These 3rd age entrepreneurs have specific values, attitudes and behaviours that affect their knowledge transfer, and importantly determine their learning needs. Interestingly, research on venture creation and development suggests that 3rd age entrepreneurs experience greater success when partnered with younger emergent entrepreneurs. There are national schemes that promote knowledge transfer between businesses, knowledge bases and Government Funded Support Services (GFSS). High Educational Institutions (HEIs) have a pivotal role to play in supporting these 3rd age entrepreneurs by: providing opportunities to collaborate around specific problems and issues influencing their businesses; providing life-long learning opportunities to acquire new skills and capabilities; teaming up these 3rd entrepreneurs with emergent entrepreneurs; and providing a stimulating environment for all parties to learn.

Our research, studies the effective value of using the UK governments’ KTP scheme to develop longer-term relationships between the business, knowledge base partner and an emergent entrepreneur, by examining three contributing factors. First, the identification of skills and experience needs of these 3rd age entrepreneurs and the use of existing GFSS to fill these. Second, to explore the current traditional role of HEIs in engaging with businesses in solutions provision and business development strategies. Third, the benefits of 3rd age entrepreneurs and emergent entrepreneurs partnering to exchange skills, experiences and perspectives of new business models.

Our research study utilizes both qualitative and quantitative data gathering. We have used 6 existing KTP projects to study the value derived from the three traditional partners (business, HEI and the associate). In addition, we have undertaken an independent survey of sixty 3rd entrepreneurs who have started a venture in the last three years. The research findings from these qualitative and quantitative research approaches have identified three primary benefits from these partnerships:

- Academics increase their skills and experiences of how 3rd age entrepreneurial ventures succeed;
- 3rd age entrepreneurs develop longer-term relationship with HEI’s to satisfy and support their current and future needs;
- Emergent entrepreneurs (associates) acquire skills and experiences from working with the academics and 3rd age entrepreneurs.

We have also identified that the KTP scheme can be further enhanced by additional top-up value focused on:

- Undertaking a more detailed assessment of the 3rd age entrepreneur’s mindset to deal with future challenges – and proposing future skills and capability developments;
- Long-term engagement with both the 3rd age entrepreneurs and the emergent entrepreneurs to help develop a life-long approach to future skills and capability development;
- To use these KTPs to develop future funding opportunities for further business developments.

The research study delivers value to academics, business entrepreneurs and emergent entrepreneurs, it provides useful experiences of what the KTP scheme can deliver to the:

- Academics – insights into the needs of the different entrepreneurs, how do HEIs deliver lifelong value;
- 3rd age entrepreneurs – partnership started by the KTP, but extended to address future needs;
- Emergent entrepreneurs – the opportunity to initially engage in a 2 – 3 year long project, but develop a long-term relationship with the HEI.
Employers, Equalities and Higher Education

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Abstract: The paper reports on an interdisciplinary project aimed at exploring employer engagement opportunities. It charts the progress of the project to date by exploring challenges faced by higher education, employers and equality. Consultation with employers regarding their Equality Act concerns is discussed and potential opportunities to provide CPD and accredited professional development are identified. The approach taken is consistent with the Leitch Implementation plan, which introduced measures to stimulate more responsive public provision; encouraged higher education to work more closely with employers and sanctioned substantial qualifications reform (Campbell, 2008). The conclusions incorporates key issues raised in the consultation with employers undertaken by the Government and draw on engagement undertaken with local employers. The research has clear practical significance as it responds to employer development needs and considers the provision of accredited training for employers. The project thus crosses boundaries between academia and the workplace offering a new perspective on practice.

Introduction

Employer engagement has recently been one of the key drivers of higher education in the UK. The Higher Education Founding Council for England (HEFCE) cited the need for developing a new relationship between higher education (HE) and employers, through their workforce development programme. The HEFCE programme focused on two related goals ‘the design and delivery of HE courses in partnership with employers, and to increase the number of learners in the workplace supported by their employers.’ The programme has been running since 2008 and is due to finish in 2011. (HEFCE, 2008)

The Leitch implementation plan (Department of Innovation, Universities and Skills [DIUS], 2007) aimed to increase the higher education (HE) sector’s focus on workforce development, and to encourage HE institutions to collaborate with employers in delivering training that meets employers’ needs. By 2009 however, according to the Innovation, Universities, Science and Skills Committee, employers were still expressing concern, in particular in relation to ‘the pace of the response of HE to the demand for non-conventional courses.’ The Alliance of Science and Skills Committees (SSCs) argued that ‘HE must also more effectively meet the needs of non-traditional learners, who may be in employment’ (House of Commons, 2009). The SSCs see work-based learning and accreditation, short courses, e-learning, accreditation of prior learning and credit-based learning as a way of addressing these issues.

Concurrently on the 26 June 2008, Harriet Harman, Leader of the House of Commons, announced the new Single Equality Bill. It was published in April 2009. Following second reading in May, the Bill moved to committee stage over the summer of 2009. The third and final Commons reading took place on the 2nd December, swiftly followed by House of Lords readings and a wide ranging debate. The Bill was approved, completing its parliamentary process on the 6th April 2010. The Equality Bill was supported by all parties in the House of Lords. A number of minor amendments were suggested and agreed in principle. More substantial criticisms were debated and agreed in committee. Finally on the 8th April 2008 the new Equality Act received Royal Assent. The majority of the provisions are due to come into force on in October 2010, with a couple of provisions scheduled for 2011 and 2012.

The timing was fortuitous, especially in view of the criticism of UK discrimination law by the European Commission (in December) for failing to protect against discrimination at work, with the threat of a potentially embarrassing referral to the European Court of Justice. (Andrews, 2010)

Within this context Southampton Solent University (SSU) developed an accreditation framework for credit rated courses for employers and employees, which aims to provide recognised certification for work related training at supervisor, senior management and executive management levels. Simultaneously the University funded a small interdisciplinary project, the Equality Research Cluster to undertake research into the then 2008-9 Equality Bill. The multidisciplinary project team aimed to explore the new provisions of the Bill, by examining responses to formal government consultation and by undertaking consultation with local employers. As a result
the team hopes to create a suite of accredited units (modules), to meet employers’ learning and development needs by preparing them to meet the new provisions of the Act.

This paper therefore reports on the progress of this research to date by:

- Exploring challenges for Higher Education, Employers and Equality
- Reporting employers’ Equality Act concerns, arising from consultation.
- Identifying potential opportunities to higher educational practice in response to employer needs.

Emerging Contexts

Higher Education and Employers-New Challenges

Workforce development and employer engagement were high on the political agenda and for higher skills (level 4 and above) UK universities were seen as potential, so far underutilised, partners. According to the CBI report, Stepping Higher’ (2008):

Universities can increase their share of the training and professional development market. They can grow the market too, by encouraging more employers to recognise the benefits of higher level skills. Nearly half of training is already delivered by outside training companies or providers, but less than half of employers use a university for workforce development. (CBI p11, 2008)

As well as providing development courses for specific business needs, universities can offer Employer Based Training Accreditation (EBTA). According to Foundation Degree Forward ‘Businesses, whether in the private or public sectors recognise the difficulties associated with reassuring themselves of the return on investment made in training our workforce.’ They state that university accreditation processes can confirm that the training delivered what was expected for the business. Similarly they add that higher education can propose ways to continue to develop people in ways that will take the business forward. EBTA sees formal accreditation as way to help to motivate, reward and retain staff and provide a quality assurance. (EBTA, 2010)

This means that Universities can consider offering professional development, ranging from formal accreditation of university run courses to the accreditation of in-company training. Furthermore HEFCE’s current funding method allows HEIs to report provision down to approximately 0.03 FTE, where 1 FTE is 120 credits. This equates to 3-4 credits and thus means that, in certain circumstances, such units may attract HEFCE funding. Many Business Schools are already used to providing professional education to those in employment, through a variety of undergraduate and postgraduate professional courses, in a range of disciplines, for example: Marketing (CIM), Accountancy (CIMA, ACCA) and Human Resources (CIPD). They are therefore experienced in dealing with employed adult learners within their HE provision and employ the notions of andragogy (Knowles1990) within their learning and teaching strategies.

Southampton Solent University (SSU) decided to take up this challenge by introducing “The Professional Development Framework” at the start of the 2009-2010 academic years. Although the finer details are still being refined, the credit levels within the framework align with the levels of the Framework for Higher Education (FHEQ). There are minimum and a maximum number of credits that can be gained via this framework with credit value directly related to hours studied and levels/volume of assessment. In this way Continuous Professional Development (CPD) activities and employer-based training programmes are blocks of learning that can be ‘accredited’, i.e. given a credit value at a specific level, dependant on learning outcomes. these accredited units are referred to as PDUs.

The Faculty of Business, Sport and Enterprise (FBSE) has already run one 10 credit unit under this framework. Evaluation indicated that the level assigned to the unit and the volume of assessment was disproportionate to the volume of credit. A revised PDU is now being offered at a higher FHEQ level and with reduced assessment. A range of smaller units are now being developed in areas such as, Management; Administration; Leadership; Finance and Marketing. Unit titles and syllabus have been identified through market research consultancy undertaken with employers. It is anticipated that this research project will help identify appropriate clients, content and levels for CPD and PDUs which help employers understand the notions of equality and to meet the new challenges of the Equality Act.

The Equality Act - Challenges for Employers

The Labour Government claimed to be ‘committed to creating a fair society with fair chances for everyone. For society to be fair people must have the chance to live their lives freely and fulfil their potential. The Government Equalities Office cited that ‘To achieve this we need to tackle inequality and root out discrimination.’ They continued their statement by stating that equality has benefits for individuals, for society and the economy.
The Equality and Human Rights Commission supports the creation of The Equality Act 2010. They see it as a modern, single legal framework, providing clearer, streamlined law that is more effective at tackling disadvantage and discrimination.

The Act has the same goals as the major European Union Directives. According to the government the Act’s overall objective is to bring people together. They refer to a ‘need for a deeper sense of commitment and mutual respect based on shared values with fairness’, and claim that it helps those who do not come into personal contact with each another to get to know and understand one another better. The Equality Act, 2010 harmonises nine major pieces of domestic legislation, and numerous minor regulations. Harmonisation is effected through a shift to reflect the European approach to anti discrimination law. In addition to consolidating existing anti-discrimination the Act extends anti discrimination in a number of areas.

The key changes introduced by the Equality Act can be summarised as follows:-

**Additional Duties for Public Bodies**
Two sets of additional responsibilities are introduced for public bodies. Firstly, public bodies will be required to consider socio-economic disadvantage when making strategic decisions. Secondly, public bodies will have a duty to consider the impact of their policies, programmes and delivery of services on people with protected characteristics. These provisions will not only affect public bodies. Private organisations that deal with public bodies may also be impacted. For example, public bodies may take into account private contractors’ Equality and Diversity policies when deciding who to contract with.

**Extended protection against Age Discrimination**
Age discrimination protection is strengthened through the prohibition of discrimination in the provision of goods, facilities or services on the grounds of age or other protected characteristics. This will affect public, private and third sector organisations.

**Provisions aimed at promoting Equal Pay**
A power for the Government to require employers of 250+ employees to publish gender pay gap information is included in the Act. Public bodies will have greater reporting and disclosure obligations. Secrecy clauses, which are often used to prevent employees from discussing their pay with colleagues, will also be rendered unenforceable

**Positive Action**
Positive action (not positive discrimination) by employers and service providers is permitted, on a voluntary basis, to minimise disadvantage to those with protected characteristics.

**Extended Powers for Employment Tribunals**
Employment tribunals are given powers to recommend actions for the benefit of the wider workforce (not just for the benefit of individual claimants.)

**Greater protection against Associative and Perceptive Discrimination**
Protection from direct associative discrimination and perceptive discrimination is clarified and extended. This means that protection will be afforded where a person suffers less favourable treatment on the grounds of a protected characteristic not of themselves, but of an associate, friend or family member. Similarly, claims will be possible where less favourable treatment is based on an erroneous assumption, for example a belief that an individual is homosexual.

**Protection from Disability Discrimination**
Some of the most significant changes to the new Equality Act can be found in the provisions relating to disability. For the first time, employers will be prevented from asking candidates questions about their health that are unrelated to the job role. It will mean those with mental health issues, a medical condition or a disability will not be forced to disclose their condition prior to the offer of employment, unless it hinders their ability to do the job. (Thomas, 2010)

A single objective 'justification' test will replace the different tests currently used. To rely on the justification defence, the employer/service provider etc. will have to show that its conduct is a 'proportionate means of achieving a legitimate aim'.

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The Challenging Perspectives of Equality

It is worth noting here that there are three different theoretical perspectives that relate to the notion Equality which help to understand where the Equality Act 2010 sits in relation to these perspectives. The ‘liberal’ approach in its traditional form can be described as ‘rights-based, liberal, rooted in legal compliance, based on equality through ‘sameness’ and merit with a focus on non-discrimination. (Gagnon and Cornelius, 2001, p68). In terms of employment this approach is generally geared towards increasing the proportion of under-represented groups in senior roles in organisations. From a liberal approach, the concept of equal opportunities is derived from liberal political ideals of classical liberalism and liberal democracy. These philosophies both assert the rights of the individual to universally accepted applicable standards of justice and citizenship. As stated by Jewson and Mason, (1986, p307) ‘equality of opportunity exists when all individuals are enabled freely and equally to compete for social rewards’ The ‘radical’ equal opportunities approaches focus on positive discrimination to meet these goals. The radical approach recognises that fair procedures have not led to fair outcomes and so stresses the need for direct intervention in order to achieve equality of opportunity and equality of outcome. The radical approach fixes attention on groups: discrimination will affect individuals but it can be identified at a group level. In terms of employment, an individual should have equal access to rewards (such as promotion), irrespective of their membership of a particular group. The radical approach therefore emphasises difference: that recognises that individuals may receive differential treatment given their social group membership. A more recent approach is the notion of diversity. At the core of the diversity model is a belief that organisations should recognise differences rather than deny or dilute them. The diversity model promotes the idea that aspects of individual difference should be celebrated by facilitating an environment that promotes inclusion and enables each individual to contribute in their own way to the success of the organisation (and society) (Kirton and Greene, 2005).

The equal opportunities agenda in organisations has, in the main, embraced the notion of diversity and many employers use the language of ‘equality and inclusion’ or ‘diversity and inclusion’. The key tenets of the legislative framework embodied in the Equality Act 2010 are nevertheless still rooted in the main in the ‘liberal’ approach to equality, with some elements of the ‘radical’ approach. This is clearly articulated through the Act’s focus on ‘protected characteristics’ which identify individuals as belonging to a group with one or more of the same characteristics.

Methodology

The main purpose of the project was to evaluate the impact of the Equality Act and to identify the potential for expanding employer engagement opportunities, in particular to assess prospective interest for accredited professional development units (PDUs). Employer consultation was necessary in order to help identify the type and level of employee to be targeted and their perceived learning needs. In addition it was necessary to establish the areas of the Act that were of most interest to employers and the type of learning provision that would best facilitate effective implementation of the Equality Act in the workplace.

This project team initially used desk-based research. An online site was developed and linked to MYCourse (Solent University Moodle) so that the project team could review the updates on the Equality Bill, as they happened. A link was embedded in MYCourse to review RSS feeds from Parliament’s Bill pages. Consultation on the Equality Bill was also reviewed and a specialised library source on Law was used to find journal articles. Subsequently a Breakfast Briefing was organised for local employers. It was led by the project team (Equality Research Cluster), with invited local employers. Nine local employers participated in the briefing and shared their perceptions and concerns regarding the Equality Act. Six of the employer representatives were from the public sector, two from the private sector and one from the third sector. The meeting consisted of a presentation, a discussion session and a short questionnaire.

Findings

The consultation on the Bill and key areas of concern

Twelve large organisations were purposively selected from the Associated Memoranda and analysed in order to identify the major areas of concern. The chart below (Table-1) represents the key areas of concern identified by the selected organisations. All twelve organisations welcomed the notion of the Equality Bill, but emphasised different areas of interest and concern. From the analysis of the consultations, the areas of interest that emerged were public sector duty, disability discrimination, age discrimination, associative and perceptive discrimination, reasonable adjustment, extended power for employment tribunals, positive action and equal pay. Table-2 accentuates the common areas of interests. Only the key provisions were taken into consideration in order to identify the most consulted areas of interests implied by the selected companies. The areas of most concern are additional duties for public bodies, disability discrimination, reasonable adjustment, age
discrimination and equal pay. Ten out of the twelve organisations (83%) expressed their concern regarding additional duties for public bodies. Six (50%) of the organisations indicated considered that the discrimination law should be easier to understand and to use by both disabled people and organisations, to enable them to comply with the legislative requirements.

Both age discrimination and disability discrimination (in particular with reference to reasonable adjustment) are recognised by five (40%) organisations as key areas of concern. Four (33%) organisations singled out the need for mandatory pay audits, for all employees, with apprehension. They cited the need to identify any disparity in pay between men and women doing work of equal value, and to produce resultant action plans as a particular worry. Three (25%) indicated that they were nervous about broader powers being given to employment tribunals to make recommendations for the benefit of whole workforce in discrimination cases. Two (16%) organisations expressed their concern about positive action. Only one organisation identified Associative and Perceptive discrimination as an issue.

**Breakfast meeting consultation**

At the breakfast meeting the team presented the key changes introduced by the Equality Act 2010 and discussed the implications for employers. During the discussion a number of employer representatives expressed the need for better understanding of the Act’s provision of associative and perceptive discriminations and had concerns regarding the ‘voluntary’ changes in positive action. They felt that as progressive employers they would need to embrace those changes. Those from the public sector also saw the changes in Public Sector duty as having major impact on their organisations, thus perceiving the need for further training to meet those duties.

**Questionnaire survey**

Employers at the end of the Breakfast Briefings completed a survey (a) prioritising their interest in different aspects of the Equality Act, (b) identifying the appropriate members of staff for development on the implementation of the Equality Act, (c) ranking the most suitable development media and tools for the organisation, and (d) identifying appropriate themes for development.

**Key provisions of interest to employers**

Employers views were assessed by asking respondents to rate their priorities on each of the seven key legislative changes on a 7 point scale from 1 (being greatest concern) to 7 (least concern), with lower scores indicating higher concern for the provision by the organisation. The results on additional duties for public bodies (55% rated it as a top concern) and disability discrimination were of notable (55% noted it a being one of their three top concerns) concern among the employers. The interest in additional duties for public bodies may be a reflection of the fact that most employers who attended represented the public sector.

**Identifying appropriate staff for development**

Four groups of employees who may find development opportunity of the Equality Act of interest were identified by the project team were (a) Senior Executive Managers, (b) HR/Personnel Managers, (c) Middle Managers, and (d) Supervisors. Employer representatives were asked to select those levels of staff they would prioritise for development on the implementation of the Equality Act. From the responses it was found that HR/Personnel Managers (78%) were prioritised for the development programme; the second priority was given to Senior Executives (55%) and lastly to Middle Managers (44%).
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<th>Organisation</th>
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<td>Carers UK (E 23)</td>
<td>Age discrimination in relation to access to goods, facilities and services</td>
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<td>Additional Memorandum submitted by Disability Charities Consortium (E 24)</td>
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<td>Unison and Fawcett Society (E 42)</td>
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<td>The Equality and Diversity Forum (E 52)</td>
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The most suitable development tools/media
The measure of interest for development tools within the organisation was assessed against a 7 point scale. A choice of seven development tools/media was provided and employers were asked to prioritise on the basis of their suitability for their organisation: (a) professional development/seminar/workshop on the Equality Act (b) bespoke on/offsite training, (c) literature, (d) online materials, (e) Breakfast Briefings for staff, (f) early evening seminar, and (g) consultancy. Respondents were asked to rate the potential usefulness of each of the seven development tools for their organisations on a 7 point scale, from 1 (being most interest) to 7 (least interest). The respondents preference order was, Breakfast Briefings, bespoke on/off site training, online materials and literature. Least interest was shown in early evening seminar/reception and consultancy.

Appropriate theme for development
The development themes identified were: (a) Equality in Organisation, (b) Promoting Equality, and (c) Equality in the Workplace. Respondents were asked to indicate which of these would be most appropriate for their organisation on a 3 point scale from 1 (being greatest interest) to 3 (least interest). Most respondents (66%) found the theme of Equality in the Workplace as the most relevant followed by the theme Promoting Equality (33%). No one saw Equality in Organisation as a the top ranking theme.

Conclusion
The study has, at this stage, undertaken the first steps to identify the key Equality Act 2010 provisions that are an implementation challenge to employers, and to explore whether employers perceive the need for development to aid implementation.

Analysis of the Associated Memorandum, (Equality Bill Committee, 2009), from Government consultation, the Solent Breakfast Briefing discussions and questionnaire analysis all indicate that employers are apprehensive with regard to a number of new Equality Act’s provisions. Employers expressed an interest in making use of professional development opportunities, such as Breakfast Briefings, bespoke on/off site training, online materials and literature, as a means of learning the key concepts and applicability of the Law. They saw professional development and training on Equality as being most for appropriate for HR/Personnel Managers and Senior Executive Managers. The most popular theme for any future development course was identified as Equality in the Workplace.

The Equality and Human Rights Commission has been in discussion with the Government Equalities Office about producing both statutory and non statutory guidance, some of which will be published prior to the Act’s implementation, to help everyone understand how equalities legislation will change. Consultation has now taken place. It is likely that when the time for the new provisions to be enacted is closer and when statutory and non-statutory guidance is available, employers will be urgently seeking help with clarification and implementation. The research reported in this paper plus the planned future research will equip SSU to be prepared to offer a range of accredited professional development units (PDUs) at the right time. In this way the some of the challenges facing Higher Education and those facing employers through the introduction of the Equality Act can be met. The project, therefore, offers perspectives on practice, which combine academic, educational and work-based research to enhance professional practice of all stakeholders.

Future Plans
The Equality Cluster group is planning to continue with employer consultations. More employers have been invited to an Early Evening Briefing in early June. The briefing will follow the same format as the Breakfast Briefing and will again be followed up by questionnaires. Should there be sufficient interest other briefings will take place at later dates. Subsequent to briefing meetings questionnaires will be distributed electronically to all local employers who were invited but unable to attend the briefings, so as to gauge their areas of concern, their levels of interest and their priorities. The information gathered will be used to inform decisions on the appropriate clients, content and levels for CPD and PDUs aimed at helping employers understand the notions of equality and to meet the new challenges of the Equality Act. In the longer term the team plans to expand the provision to encompass accreditation of in-company training thus further breaking down the boundaries between the worlds of higher education and employment.
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Experiential Exercises and Action Learning for Teaching Project Management in and Undergraduate Business Program

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In this presentation we will consider the case of using experiential exercises in teaching project management.

Project management is receiving more and more attention because the rate of change is increasing and project management is considered an effective method to approach and manage change. As such, it is no wonder that project-based organization of work and how project management practices can be improved to create conditions for project success continue to receive considerable interest. Likewise, the interest in designing training programs for teaching project management continues to grow. This growth, however, has not yet resulted in a significant body of experiential exercises for teaching project management.

In this presentation we will consider two assignments. In the first assignment, groups of students are given a project to identify values taught in a given textbook, like introduction to accounting or OB. They have to define the scope and deliverables of the project, plan and execute it within a 10-week period. In the second assignment, groups of students are given a project to write a case about a specific decision (already selected by the instructor) taken in an actual and current project. In this instance also, student teams need to define the scope and deliverables of the project, plan and execute it within a 10-weeks period. Such assignments are not artificial projects, but actual research projects with the objective to present the project outcomes at an academic conference. Students are then executing real projects.

In the presentation we will consider using International Project Management Association (IPMA) self-assessment questionnaire to help students reflect on their project management competencies and their developmental needs. We will explain how such instruments help the teams work through the Kolb's process of experience, reflection, abstraction, and action. Furthermore, we will consider the importance of assessment throughout the process and argue that assessment should focus on the process of project management and not the outcome. This will create challenges, as students are accustomed to being assessed for delivery of the final product.

The presentation contributes to the current literature on teaching project management by introducing and evaluating two experiential assignments. We will conclude the presentation by exploring how the concept of design theories can be utilized to help students understand the complexity of project management.

References


Combining Formal and Informal Learning for Undergraduate Management Students Based in London

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Objectives or purpose of the proposal
This paper discusses, and reflects upon, the experience of developing a module, delivered as an early part of an undergraduate degree programme in management, that combines formal lectures with a range of informal approaches, with the aim of providing students with an effective learning experience that provides a useful basis for later stages of their studies. This approach was adopted as a response to the need for students from a variety of backgrounds to work together within a cohort. The analysis takes into account both the experience of students during the module itself, and that of students later in their degree programmes who can judge what parts of this introductory module proved most valuable.

An important part of the context was the programme’s location in Central London, and it was clear that the location influenced the student experience in several ways, notably:

- Some students already lived in London before joining the programme and did not want to move
- Conversely, many students came from different parts of the world and were attracted to studying in London through its reputation as a world city
- These students mostly wanted to be part of a cohort defined by being based in a particular geographical location, so they were inclined to modes of study which placed an emphasis on face-to-face contact
- They were interested in the characteristics of London, and its role as a centre for business.

Perspectives on practice or theoretical framework
The pedagogic approaches adopted were influenced by the notions of semi-formal or non-formal learning (Eraut, 2000), which deviate from the established didactic lecture style, but also assume some structure. Furthermore one aim of the degree programme was to develop the students’ abilities as team workers, and to exploit the benefits of operating within transient teams (Kester et al, 2007). Therefore team exercises were designed to prompt reflection among students into their own individual and team learning processes, consistent with the idea that students could form a community of inquiry (Garrison et al, 2000).

A particular response to the location in London was to include an exercise using psychogeography, where groups of students were required to take a walk around the City of London using the principles of the dérive originating with Debord (1958), noting their observations and lessons that might be learned about the location.

Methods or modes of enquiry, or evaluation of practice
Development of this module is an iterative process, and could be viewed as a process of action research where the students’ roles are analogous to those of participant observers. It is recognised that the business context is in a continuous state of flux, and a particular challenge that has arisen since the module was first proposed, is the need to educate management students during an economic recession.

Data sources or evidence of trends and issues identified
Like all teaching within the undergraduate programme, this module is evaluated through student questionnaires submitted at its end. Additionally, a session using electronic personal response systems has been built into the module, and the data thus gathered can contribute to the evaluation. There are concerns associated with over-reliance on data from individual module questionnaires, notably that (particularly in a programme that includes a broad range of subjects) they can exacerbate a sense of different modules existing within separate ‘silos’ with little co-ordination between them, and that students’ satisfaction at the end of a module is not necessarily a guide to how useful they will find the learning from that module in the long term. Some focus group work is proposed with final year management students to address this last concern.
Results, conclusions or point of view
This module is clearly valuable for students, who have benefited from the range of formal and informal learning components. The overall design has also proved adaptable, both in terms of accommodating a range of students with diverse background, and also in making it possible to build topical issues into the learning experience.

Implications for research, theory, or innovation of practice
It is tempting to think of combining approaches to learning purely in terms of combining different channels, such as online and face-to-face contact with students. However the module discussed here is heavily focused on face-to-face interaction, as befits material intended for students attending a city centre university, but nevertheless uses a range of different tools which encompass both formal and informal learning. Combining face-to-face and electronic delivery of educational materials happens in many settings (in the instance discussed here, extensive supporting web resources were posted by the tutors), but both formal and informal learning methods can be used within both face-to-face and online approaches.

This module has now been delivered to three successive cohorts of students. At the end of each year significant changes have been made in response to feedback, and the most recent cohort have remarked positively on the module’s value in creating a cohesive group. However this is also the stage where members of the first group of students to take the module are approaching the end of their studies, and an opportunity exists to review how effectively the module prepared these students for subsequent stages of their undergraduate programme.

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On the Effectiveness of Economic Experiments as a Method of Teaching Undergraduates

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Abstract: Although literature on economic classroom experiments is growing fast we have found a total of only three studies that measure the effectiveness of the method in a control group design where undergraduates were taught with experiments through the semester. We have therefore conducted a similar study with two microeconomics II courses of the years 2008 and 2009 (N=161). Students were divided in two groups. The “experiments” group was learning by playing games. The control group was taught traditionally in lectures. Applying a series of three tests we can show a small advantage of the experimental method in the procedural domain and in the earlier tests of the semester. In the declarative domain and at a later stage in the semester the lectures group outperforms the experimental group. Furthermore we can show that the results crucially depend on the measurement method.

Introduction

Experiments in economics represent a method for teaching students economics by playing games. This method seems to be disseminating in the field of colleges and universities more and more. If you type in the words “classroom experiments” in a simple google-search, you will receive as much as 7,830,000 hits. But for a long time experiments were regarded as an unsuitable research method for economics – in contrast to their frequent use in sciences, engineering and psychology. One of the pioneers of classroom experiments was Edward Chamberlin, who gave an account of the first market experiment as early as 1948. With the help of a deck of cards he tried to explain to his students demand- and cost-structures. Although the earnings were purely hypothetical, the students showed a higher motivation and were much more engaged in learning economic contents (Chamberlin, 1948). One of his students at Harvard University was Vernon Smith who was fascinated by this method. Smith slightly changed the experiment conducted by Chamberlin:

Rounds were to be repeated, payments became real cash and the market situation got a more realistic touch. Smith constructed a game situation called “double auction” where all prices for supply and demand were publicly accessible. By this means, he demonstrated that such markets would inevitably converge towards equilibrium, even if there were only a few suppliers who would know nothing of the market conditions (cf. Davis and Holt 1993: 6f). In 2002 the Nobel Prize for Economics was awarded to Vernon Smith in honour of contributions to experimental economics.

Although the use of activity-based methods in economical teaching/learning processes is generally considered positive (especially the motivational aspect is often emphasized) and it can be a true alternative to traditional “talk-and-chalk economics” (lecture, teaching/learning conversation), it has to be noticed that these methods lead in many cases to a theoretical depletion of teaching and instruction. A substantial cause of this is due to the fact that although many activity-based methods permit direct access to non-domain-specific competences (e.g. role playing promotes communication and conflict skills) and are often summarized under the term “key skills,” the technical training comes off badly. Therefore, many activity-based methods are considered at most suitable for getting a start in teaching/learning processes regarding economic contents.

In general, literature on economic experiments is growing fast (see e.g. Holt, 1993 & 2006; Kagel and Roth, 1997; Schlösser e.a., 2009). But little is known so far about the effectiveness of the method. Looking at the relevant literature we found several studies that evaluate the effect of one single experiment (e.g. Frank, 1997; Gremmen and Potters, 1997) and some that focus on an enumeration of possible classroom experiments (Holt, 2006; Brauer and Delemeester, 2001).

To the best of the authors’ knowledge there exists a total of three studies that deal with the question of measuring learning progresses in time with a group of college undergraduates while students
are “treated” via experiments lessons versus lectures. Dickie (2006) finds in a study with N=142 college
students that “integrating classroom experiments into the introductory microeconomics curriculum
increases learning”, and a similar result was obtained by Emerson and Taylor (2004) in a study with N=300
students. On the other hand Cardell et al. (1996) in their study with 1800 participating students reported no
significant learning effects between the groups that were taught differently.

In our study we share the general approach of Dickie (2006), Emerson and Taylor (2004) and
Cardell et al. (1996) but modify it in several important ways. First we have found it interesting to contrast
the results of the colleagues with an analysis in a “microeconomics II” course which is at a higher level of
difficulty than the beginner or “principles of economics” level, since it requires the knowledge of the
“microeconomics I” course. That has led us to a second modification of the well-established above-
mentioned research designs, because we could not use the Test of Understanding in College Economics (TUCE) (Saunders, 1991) to test for the differences in learning of the students. While developing our own
curriculum-based test questions, we decided to drop the pretest-posttest design and developed a series of
three different small tests (t1 to t3) that students had to take during the sequence of the semester.

Our study was conducted focusing on the following research questions:
1) Do economic experiments in the (college) classroom have positive effects on students’ knowledge of the
curriculum compared to a control group taught in ordinary lectures?
2) Which of the possible manifestations of knowledge, declarative or procedural knowledge, is more
affected?
3) How does the knowledge of each of the two groups develop over the time of the semester?

In accordance with Brauer and Delemeester (2001) who observe that “[..] the overwhelming
number of games are written for the principles of microeconomics course […]” and “[..] at the post-
principles level […], there are, as compared to 1994, more but, again, very few games available (thirteen
instead of five) […]”, we developed a bunch of economic experiments for use in both college and university
classrooms that are mainly computer-based and – for the experiments relevant for the microeconomics II
course – rely on a Microsoft Excel application package (Schlösser, e.a., 2009), that we have developed
recently. Specifically we developed the sequence of experiments (though we go beyond the demands of a
principles of microeconomics course) keeping in mind what Brauer and Delemeester (2001) wrote:

Twelfth, even though there are some oligopoly/monopoly games in which the number of
suppliers can be changed – thus permitting the potential construction of a single game to
capture the three market structures crucially dependent on the number of suppliers, perfe
t competition, oligopoly, and monopoly – no one appears to have attempted to construct
a single foundational game that, with variations on the theme, could capture almost all to
pics for an entire introductory course in microeconomics.

We followed the idea of a coherent framework for the learning of advanced microeconomics by
constructing a special Microsoft Excel spreadsheet that serves to visualize, for example, cost curves, but it
also offers the students the opportunity to practice and try out things for themselves. The main underlying
focus is to get students to deal with the contents of the subject matter and consequently to be able to make
their own decisions accordingly.

The experiments we used in the microeconomics II course are shown in figure 1.

<table>
<thead>
<tr>
<th>Game</th>
<th>Topic</th>
<th>Source</th>
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<tbody>
<tr>
<td>1. Chocolate bar market</td>
<td>Demand curve</td>
<td>For all games: Schlösser e.a. (2009)</td>
</tr>
<tr>
<td>2. Chocolate bar to sell</td>
<td>Perfect competition</td>
<td></td>
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<tr>
<td>3. Chocolate bar sales</td>
<td>Monopoly revenue</td>
<td></td>
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<tr>
<td>4. Winning with chocolate bars</td>
<td>Profit maximizing in monopoly</td>
<td></td>
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<tr>
<td>5. Cournot-model</td>
<td>Oligopoly</td>
<td></td>
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<tr>
<td>6. Bertrand-model</td>
<td>Oligopoly</td>
<td></td>
</tr>
<tr>
<td>7. Monopoly</td>
<td>Monopoly</td>
<td></td>
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<tr>
<td>8. Market entry in monopoly</td>
<td>Monopoly</td>
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Figure 1. Experiments that were used
Framework of the Study

To address this question we have conducted a small evaluation study at the University of Siegen. Students of two microeconomics II courses were taught in following time slots by Professor Schlösser. The students in the courses of the years 2008 and 2009 (N=161) were divided in two randomly chosen groups. To be precise, the group selection process was not perfectly random since students could make a self-selection via their inscription into the two courses. Because of the fact that students knew nothing in advance of the “treatment” they had to face and the differences in the courses, we consider the group selection process negligibly imperfect. The “experiments” group was learning the various market forms, pure competition, monopoly and oligopoly by playing games. The other (control) group was taught traditionally in lectures.

Looking at the relevant literature we found a total of three similar studies that deal with the question of measuring learning progresses in time with a group of college undergraduates while students are “treated” via experiments versus lectures. Dickie (2006), Emerson & Taylor (2004) and Cardell et al. (1996) have all applied the Test of Understanding in College Economics (TUCE) (Saunders, 1991) to measure differences in knowledge in a pretest-posttest design. Our approach is different in two substantial parts.

First, we could not use – even though we would have liked to – the TUCE, because it was primarily developed for the use in American or at least English-speaking universities. The problem for us was of course not one of translation but the TUCE items simply do not cover the curriculum that is usually taught in a German microeconomics II course. Since, furthermore, the TUCE can be criticized for a lack of validity and reliability (see: Becker, 1997) we chose to develop our own test items that we could base directly on the curriculum that students had to face to ensure content validity.

Second, we decided not to utilize a simple pretest-posttest design such as that found in Dickie (2006), Emerson & Taylor (2004) and Cardell et al. (1996) that poses the same questions twice in pre- and posttest. Our reason is that for any test design repeating the same questions, it is unsure what the answering behavior can be attributed to: The test-takers learning through treatment or becoming more familiar with known questions. We were not only interested in the question if the experimental method outscores the chalk-and-talk-teaching or vice-versa but also in the question to know how over the proceeding time of the semester this happens. One last annotation that we have to make is that we would have liked to use the students’ cumulative grade point averages (GPA) or the scores on the American College Test (ACT) but there simply is nothing comparable in Germany that we could have used to link students’ performance in our tests to.

To assess the learning advances of the two groups we applied 3 different small tests, one in the fourth week of the semester (t1), one in the 8th (t2) and the last one in the closing week of the two courses (t3). Alltogether the tests contained an amount of 19 questions or items (t1 = 7 items, t2 = 5, t3 = 7) directly based on the curriculum that was taught to reach curricular validity. The items were of multiple choice type and we have “dichotomized” the results in the sense that 1 was indicating a correct answer and 0 a wrong one.

![Figure 2. Time Structure of the Tests](image)

The tests were composed of two types of items. Declarative items measuring “pure” fact knowledge and procedural items that required the application of acquired knowledge. What do we mean by the two concepts?

The storage of knowledge and its application are activities of the brain with respect to its complex memory system (cf. Anderson 2007). It has been discovered that it is necessary to apply different structures of knowledge in order to solve problems successfully. The process in place here is called “knowledge
compilation” by memory researchers (cf. Gerrig and Zimbardo 2008, p. 235). These structures are differentiated into declarative knowledge on the one hand and procedural knowledge on the other hand.

Declarative knowledge labels the factual existing knowledge or also the conscious remembering of events and facts (cf. Gerrig and Zimbardo 2008, p. 234). It comprises the complete knowledge base and is mainly organized and categorized in linguistic concepts (Tücke 2004, p. 229). There are also visually organized concepts, like for example a photo that pictures a poor looking man lying on a bench in a park. Even without any additional information, most people will automatically classify this man as a derelict (cf. Tücke 2004, p. 231). An example for declarative knowledge from our tests is the following question, where knowledge relates to a fixed and definable technical term.

Following Bertrand there is a Nash-equilibrium if

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<tr>
<td>0</td>
<td>suppliers set a price as high as the marginal costs.</td>
</tr>
<tr>
<td>0</td>
<td>suppliers set the same price.</td>
</tr>
<tr>
<td>0</td>
<td>suppliers set their prices independently.</td>
</tr>
<tr>
<td>0</td>
<td>suppliers offer the same quantity.</td>
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</table>

Procedural knowledge refers to manifold possibilities to link elements of declarative knowledge. Different concepts and actions can be combined in various ways (cf. Tücke 2004, p. 229). Procedural knowledge specifies the way things are done or, to put it differently, it describes how problems are solved with the help of various techniques, methods and algorithms. It is used to acquire, maintain and apply cognitive and motor abilities (cf. Gerrig and Zimbardo 2008, p. 234). Procedural knowledge is practically utilizable knowledge that is often realized through automated and therefore unconscious routines of processing. The combination of both areas of knowledge complicates the verbalization and mediation of procedural knowledge. For example, it is hard to describe exactly what you do when you change gears while driving a car (cf. ibidem, p. 235). An example from our tests for procedural knowledge is the following question, because a graphical or mathematical calculation is needed to solve it.

If a monopolist rises the price

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<tbody>
<tr>
<td>0</td>
<td>profits sink because the sold quantity sinks.</td>
</tr>
<tr>
<td>0</td>
<td>profits rise because earnings per unit sold rise.</td>
</tr>
<tr>
<td>0</td>
<td>profits sink if the marginal revenue is &gt;0.</td>
</tr>
<tr>
<td>0</td>
<td>profits rise if the sold quantity is larger than the profit maximizing quantity.</td>
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The distribution of the declarative and procedural test questions was the following: Test 1 and 3 each had an amount of three declarative items and four procedural ones and test 2 contained two declarative questions and three procedural ones.

**Study Results**

The population of the study contained a total of N=161 students of whom 97 (60.2 %) were enrolled in the 2007 and 64 (39.8 %) in the 2008 microeconomics II courses. Among those were 26 (33.3 %) male and 52 (66.7 %) female subjects and 83 students who did not fill out the question. The students mainly did not study “pure” Economics. Instead, they cover a wide variety of BA programs. A majority of 55.8 percent studies for a teaching degree for vocational college or secondary school and 2.6 percent of the students strive for a BA in Economics. The remaining students are divided into the BA programmes “Language, Communication, Media Studies” (29.9 %) and “Language and Communication” (11.7 %).

The students were on average in 4th semester and 92.3 % of them had attended the preceding microeconomics I course. Their self-estimated knowledge of microeconomics had a mean of 3.22 on a 5-point Likert-type scale and their general Economic knowledge 3.25. Their interest in the field of Economics was very high with a mean of 3.81 on a 5-point Likert-scale.
The distribution of students in the lectures and experimental groups in the two years can be found in table 1 below. The table also shows a considerable amount of missing values in the different tests.

Table 1: Distribution of Students in Groups and Missing Value

<table>
<thead>
<tr>
<th></th>
<th>lectures group percentage</th>
<th>experimental group percentage</th>
<th>missing percentage</th>
<th>total percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>t1</td>
<td>54</td>
<td>33.54%</td>
<td>50</td>
<td>31.06%</td>
</tr>
<tr>
<td>t2</td>
<td>59</td>
<td>36.65%</td>
<td>42</td>
<td>26.09%</td>
</tr>
<tr>
<td>t3</td>
<td>60</td>
<td>37.27%</td>
<td>46</td>
<td>28.57%</td>
</tr>
</tbody>
</table>

The problem of missing value occurred because the tests were conducted in ordinary lessons without any “prewarning” of the students and economic courses at the University of Siegen usually do not require the students’ presence at all times. To cope with the missing test values and to avoid a one-sided biased estimation of the effects we decided to calculate a series of six different models, using various techniques from social sciences, econometrics and psychometrics.

The first model simply includes those test-takers who have participated in all three tests. The model has a quasi-population of N=57. In the second model we take all students into account who have taken at least one of the three tests which results in different populations of N=104 for test 1, N=101 for t2 and N=106 for t3. While the preceding models leave the data unchanged and can be considered as standard, the third model uses a method derived from the Social Sciences to reduce the portion of missing data via multiple imputation. The fourth and the fifth model are modifications of model 1 and 2 where we refer to Econometrics and use a standard Heckman two-step procedure to correct the valid data for systematic biases that are calculated from test nonresponse. The sixth and last model is a model of the Rasch-type family taken from the world of Psychometrics as it is often used nowadays in the famous PISA- and related school evaluation studies.

Prior to applying the models mentioned above we calculated simple sums of test scores, where a right answer had a value of 1 and a wrong one 0. For each test (t1 to t3) there were built different sums of test scoring for declarative and procedural items and for each test as a whole. Then we computed the solving percentage per test as a measure for the individual test performance for each of the tests in each of the two knowledge categories separately, because not all of the tests had the same quantity of test questions.

To start with the first model we have displayed the means of the percentage of solved items in the four curves of the figure below.

Figure 3. Solved test questions percentage in model 1 (N=57)
Testing for significance with a simple two-sample t-tests (1) yielded only significance at the 5 percent level for the declarative part of test 2 in year 2008 and for the procedural part of test 2 in 2007. Furthermore the procedural part of test 3 in year 2008 was significant at the 1 percent level.

If one has a closer look at figure 3 it becomes obvious that the lectures group performance is always better (t2) or at least equal (t1 and t3) in the declarative parts of the tests. That was according to what we had expected since the reproduction of fact knowledge seems to be learned more easy for the students in traditional lectures. On the other hand the group that was taught using economic experiments has a better knowledge in the procedural parts of test 1 in 2008 and of test 2 in 2007, whereas they are equal with the control group in test 2, 2008 and in test 1, 2007. In the procedural knowledge at measuring point 3 they perform much worse than the control group. The results for the procedural parts of the tests were surprising for us, since we had expected the experimental group to clearly outperform the control group in this area, especially when one remembers the active use of knowledge that is needed in both, economic experiments and procedural knowledge. To sum up for model 1 we consider a small advantage of the lectures method that is mostly due to the performance in test 3.

Because we had to deal with the problem of missing test data as already mentioned above it is not fully clear yet in how far the results of model 1 can be attributed to missing values or true test values. To control for this issue we proceed to the next model where every test result is incorporated that a person has received at any of the three tests, so that no valid data is omitted. The curves in figure 4 accordingly represent the means of the percentage of questions that all test-taking subjects who particpated could solve.

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**Figure 4.** Solved test questions percentage in model 2 (N=104, 101, 106)

Figure 4 shows an overall shape that is similar to model 1 in figure 3. But while the percentage means for both years’ courses in the procedural domain show the same mixed effects as in model 1, the curve for the experimental group in the declarative domain is clearly worse compared to the one of model 1, indicating that with all valid test answers included the advantage of the lectures method rises. These unfavorable results for the experimental method are a little attenuated if we take the t-tests for significance into account that showed a total of four significant differences in the means at the 5 percent level, that is for the procedural part of test 1, the declarative part of test 2 in year 2008 and for the procedural part of test 2 in 2007. Furthermore the procedural part of test 3 in year 2008 was significant at the 1 percent level. Out of the four significantly different means there is only the one in the declarative part of test 2 that favours the lectures group. The three other significant differences have higher knowledge values for the experimental method.

Taken altogether the results of model 2 are hard to interprete. The lectures group performs better overall, but the majority of the significant differences favours the experimental method.

For the next model, model 3, we apply the first method of reducing the amount of missing data, that is derived from Social Sciences research (see e.g. Rubin, 1987). The so-called multiple imputation method is incorporated in the SPSS (or new PASW) software package. The idea behind this is to estimate missing values based on valid other values of the dataset. But unlike other problematic earlier missing data methods as mean imputation, that notoriously reported too small sample means and p-values accordingly, multiple imputation has found an elegant solution for the issue by incorporating a random component. To be more concrete multiple imputation creates m (typically between 5 and 10) full new data sets where each missing value is built out of the valid data and a random component. Ideally a combination of the m
datasets will result in unbiased parameter estimates and a full sample size, depending on the initial amount and distribution of missing data.

We have actually computed a series of \( m=5 \) datasets to fill out our missing data gaps that in combination resulted in the following figure 5, that shows in the same way as in the preceding two models the means of the test solving percentage, in the case of model 3 for a pseudo-N of 146 virtual test-persons.

![Figure 5. Solved test questions percentage in model 3 (multiple imputation with 5 imputations, pseudo-N=146)](image)

Using multiple imputation we can in figure 5 derive mean curves that lie a little closer to each other than in the two preceding models. Furthermore the experimental lectures group is performing better than in the models without missing value imputation, especially in the procedural parts of the tests, where the proportion of the tests that favor the experimental group is four to two overall. If we do – with all necessary caution due to the imputed data - take the significance levels into account, it shows that the differences in the means of the procedural parts of test are significant for tests 1 and 3 (declarative, 2007) and test 2 and 3 (procedural, 2007), furthermore for tests 1 and 2 (declarative, 2008) and tests 2 and 3 (procedural, 2008). These results indicate that missing value may have a crucial impact on the effect measurement and must result in a recommendation to any scientist working in the field, including ourselves, to strive for the reduction of missing test values.

Whereas the method of multiple imputation that we applied for model 3 only controls for missing test values lacking for unsystematic reasons, the following procedure from the field of Econometrics also allows for systematic test missing to occur.

For the calculation of the next two models (model 4 and 5) we have applied a standard correction procedure following Heckman (1979). The idea behind this is to control for non-random selection processes in the missing value, e.g. a sub-population of test-takers misses a certain test with systematically higher probability. Because selection biases in the two groups (lecture and experimental) could have heavy influence on the resulting effects strengths, we have corrected the means of the declarative and procedural parts of the tests \( t_1 \) to \( t_3 \). But Heckman’s standard two-stage correction for the potential sample selection bias was developed for the use with regression weights. Because we wanted to make the test solving percentage means comparable among our models, we used a method that was first established by Reimers (1983) and described in a “user-friendly” way by Kugler (1988).

The Reimers (1983) procedure was originally developed to explain labor market discrimination against hispanic and black men. We applied it in the following way. First, we computed a series of probit regressions where the propensity to take a test was specified as a function of all factors specified in the educational production function above. But this reduced the percentage of relevant missing value even more resulting in a very small amount of valid values. We therefore decided to reduce potential influencing factors and included only the variables gender, year of test participation (2007 or 2008) and semester into the probit regressions.(2) The probit regressions were then computed for the experimental and lectures groups separately and transformed to regression weights („lambdas“) in the sense of Heckman following the procedure that Smits (2003) describes for the use of the statistics program SPSS.(3) The lambdas were then – again separately for both groups – put into the OLS-regressions of the educational production function. This was done for the declarative and the procedural parts of all three tests. The means of the
residuals of the OLS-regressions were then used to correct the means of the initial values. Figure 6 shows a Heckmann-corrected version of model 1.

 Applying a Heckman correction to the data of model 1 leads to the most “pessimistic” estimation of the effect size of economic experiments in the classroom of all models. While the comparison of means in the declarative domain yields similar results as model 1 the performance in the procedural domain is even worse. A plausible explanation for this puzzling result could be that especially the “strong” students in the lectures group did not attend all of the lessons where the tests were written while the experimental group stayed “aboard”.

 If we look at the next Heckman-corrected version of our second model, model 5, it becomes clear that this view is not supported when taking all test persons into account und correcting for possible test-taking selection biases.

 The last analysis (model 6) was carried out by using methods of Psychometric test-theory or Item-Response-Theory (IRT), more precise by utilising the dichotome Rasch model (originally Georg Rasch, 1960; for a current presentation see e.g. Fischer and Molenaar, 1995; Davier and Carstensen, 2006; Rost, 2006) with the help of the programme Conquest 2.0 (Wu, Adams, Wilson, Haldane, 2007).

 Because of the fact that three tests were administered with two different cognitive subdomains (declarative and procedural knowledge) the result is a sixdimensional IRT model (see Adams and Wu, 2003; Wu, Adams, Wilson and Haldane, 2007). The model showed an acceptable item-fit according to the criteria described in the PISA
Technical Report (Adams and Wu, 2003) and the deviance is 2323.17, which is not good but acceptable for a model with only 161 participants. The very reason why we have calculated the model is to make use of the plausible values procedures included in the Conquest 2.0 framework as they represent another intelligent approach to cope with missing data. Plausible values are drawn randomly with a certain Monte Carlo algorithm - following the work of Mislevy (1991) and Mislevy et al. (1992) - from the marginal posterior distribution for each student and do not assume normality of the distributions. Figure 8 shows the expected a posteriori estimators’ plausible values (EAP/PV) of the means of the three different tests.

Figure 8. Solved test questions percentage in model 6 (Rasch model, EAP/PV-estimator, N=161)

In figure 8 the curves are “shrunken” together. This is a well-known feature of the EAP/PV-estimators. Even more interesting is the fact that the sixdimensional Rasch model shows the best values for the experimental method of all our models. Specifically, it is the only model that shows an advantage of students knowledge while having been in the experimental group. Even though no significance procedure is available for the EAP/PV estimators so far, we can still state that looking only at model 6 experiments are favorable.

Conclusion

Coming back to our research questions we can sum up to the following: First, our study shows no global positive effect of economic experiments in the classroom. Insofar, it is in line with Cardell e.a. (1996). Rather, the opposite is the case, especially for the declarative parts of the test. For the procedural parts of the test, the evidence of our study is mixed but with a certain tendency towards a small positive effect.

Second, we could show that in the case of substantial missing value the results crucially depend on the measurement method. It is then also impossible to say which of the methods is the “right” one. Looking third at the development of knowledge of the two groups over the time of the semester we can show that for the first measurement point early in the semster economic experiments are better able to motivate students to occupy with Economics. This effect turns over the second measurement point to a clear advantage of the lectures method in the last week of the semester. A perfect curriculum that would want to implement the results of our study would therefore start with the experimental method to ensure motivation of the students and then in the course of the semester switch to a larger portion of traditional chalk-and-talk lessons to ensure a more profound understanding of the microeconomic field.

We conclude that if we want to bring students to a profound and deep understanding of economic thinking and avoid pure “learning to the test”, teaching with the experimental method may have advantages that should be seriously considered both in university and school teaching processes. On the other hand the method is not always globally positive for students’ knowledge and understanding. It must be used carefully and with accurate planning of the particular lesson trough the semester.

For a better clarification of this interesting field of “everyday”university life, further research is needed that extends the amount of valid test subjects and spreads to other fields of economic teaching, such as macroeconomics, public economics, etc.

Still it remains true what Brauer and Delemeester (2001) wrote: “[...] much progress has been made in attempts to measure the pedagogical Games Economists Play and learning effects of games with the
result (a) that students by-and-large enjoy the gaming approach [..]”. We could add that their academic teachers do alike.

Endnotes
(1) Controlling for normal distribution first, we have also computed chi-square tests and Shapiro-Wilk-tests that show a close to perfect normal distribution. That is no miracle due to the fact that the distribution is about test marks. Furthermore controlling for significance with parameter-free methods like Mann-Whitney-U-tests and Kolmogorov-Smirnoff-tests showed close to full accordance with the t-tests. We will therefore for the following only compute the t-test significance results.
(2) The regression weights were not significant except for the variable gender.
(3) To be precise we first used the Logistic regression and then transformed it to Probit-values in the sense of Smits (2003).
(4) For the details of this procedure the reader is referred to Wu, Adams, Wilson, Haldane (2007).
(5) The EAP/PV-estimators were linearly transformed to a distribution that has the same mean as the average of the means of the other models to ensure comparability.

References
The “WIFI & SportsFoundation - Academy” - Crossing Borders between Top-Sports Training and Vocational Training

Monika Elsik, Institute for Economic Promotion, Kurt Schmid, IBW, Michael Hadschieff, Österreichische Sporthilfe, Austria, Vienna, monika.elsik@wko.at

The “WIFI & SportsFoundation - Academy” - Crossing Borders between Top-Sports Training and Vocational Training

Project Objectives
WIFI Österreich (Institute for Economic Promotion of the Austrian Federal Economic Chamber) and the Österreichische Sporthilfe (Austrian SportsFoundation) launched a unique project in Europe: The WIFI Sporthilfe-Akademie (WIFI & SportsFoundation - Academy) which supports and assists top-athletes during their sports careers by offering customised further education and training programmes and in this way prepares them for their career after sports.

What business and sport have in common: Top athletes are used to deliver top performance against the competition on a daily basis and are always ready to face new challenges. After all, endurance, motivation and ambition are essential to both success in sport and top performance in the private sector. This means that athletes are very well suited for successful careers in business – a glance at exemplary careers in Austrian companies is proof enough of this.

Implications
However, many athletes seem to have a difficult time transitioning – crossing borders - from their sports careers to employment. One reason for this is the often low level of formal education or very rudimentary vocational training that athletes gain as a result of the fact that their sports careers start at a very young age. Education is often viewed as a secondary priority and in many cases “falls by the wayside” due to the great deal of time needed for training and competitions. Another reason is that athletes often find themselves in a period of new orientation when it is time to find employment once their sports careers are over.

For both of these reasons, it is important to provide career/educational counselling in the early stages of an athletic career to help make athletes aware of the training that is available throughout their sports careers. So on the one hand the WIFI & SportsFoundation - Academy offers a “Potential Analyses” (concerning individual competences, skills and talents) including a counselling-phase also to possibilities/ways of (business) education/training and on the other hand (some of) the courses itself.

Research
A survey done by the WU Wien (Economic University Vienna) underlines the importance of initiatives like the WIFI Sports-Foundation-Academy but also points out the comprehensive social responsibility for the target group (esp. by governmental bodies), lack of information at all levels and need of further support especially at the Tertiary educational level.

To evaluate and improve our Academy-project for all these purpose, a relevant enquiry is currently being conducted. The focus of the survey includes topics as for instance:

- What were the obstacles/hindrances to continuing your education?
- Looking back, how interesting or necessary would an accompanying educational/career counselling programme have been?
- How could this kind of accompanying educational/career counselling programme be designed to make it appealing to active athletes so that they take advantage of it?
- How difficult was the transition from your sports career to the working world?
Presentation
The Idea is to briefly present the project “WIFI & SportsFoundation - Academy” in general and the (initial) results and findings of the survey at the 17th EDiNEB-Conference in the Open Track.

1) Österreichische Sporthilfe: founded in 1972 by the Austrian Government connected at the Bundesministerium für Landesverteidigung und Sport (Federal Ministry for national defence and sports) and the Federal Sports Association, Austrian Federal Economic Chamber and the Austrian Olympic Committee


3) Survey by Österreichische Sporthilfe (Austrian SportsFoundation), WIFI Austria and ibw (Institute for Research on Qualifications and Training of the Austrian Economy) Target group: Top athletes in Austria. Around 400 Austrian athletes per year gain financial support by the Österreichische Sporthilfe because they reach the necessary performance criteria.
Exploring Critical Challenges in Implementing the Development Centered Paradigm of Education

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Abstract: The Development Centered paradigm (DCP), an educational approach that transcends the Teaching (or Teacher) Centered Model (TCM) and the Learning (or Learner) Centered Model (LCM), faces at least three major implementation challenges. These three challenges are framed as arguments that proponents of TCM, and to a lesser extent LCM, make in support of their own educational perspectives. These arguments are that: undergraduates are unable to make wise choices about their professional futures, students need structure from experts, and educational institutions must determine curricular content in order for diplomas or degrees to have societal value. This paper explores these arguments and the counter-arguments offered by DCP, concluding that DCP holds considerable potential provided educators effectively address these implementation challenges.

Introduction
The educational landscape — primary, secondary, and higher education — has been dominated by two models throughout its long history. One model — the Teaching (or Teacher) Centered Model (TCM) — dominated education from its inception until well into the 20th century. The other model — the Learning (or Learner) Centered Model (LCM) — has gained increasing popularity in the past few decades. In a paper presented at the 2008 EDiNEB conference, the problems and prospects for each of these models were extensively reviewed and the conclusion was reached that a new educational approach is needed — one that transcends TCM and LCM (McCuddy & Reeb-Gruber, 2008). This approach, known as the Development Centered Paradigm (DCP), is focused on learner development and it capitalizes on the naturally and universally occurring process by which human beings develop into functionally mature adults.

All human beings move from a state of immaturity to maturity during their physical, psychological, and intellectual development. This natural developmental process informs DCP from a theoretical perspective. DCP seeks to build on this developmental process by creating educational opportunities that begin with the learners’ interests, curiosities, and talents; then through active personal management of their own learning, people move toward fuller attainment of the capacity to live as functionally mature individuals (McCuddy & Reeb-Gruber, 2008).

Of particular interest to the present paper is the fact that DCP uses the student’s interests, curiosities, and talents as a starting point — and these are articulated from the student’s perspective. In contrast, LCM, while also focused on the learner, is structured from the institution’s/designer’s point of view and then tries to take the students’ prior knowledge and experiences into consideration in the design and execution of the learning activities. The assumption of DCP is that learning is easier and more enjoyable when the student’s interests, curiosities, and talents provide the starting point; if a person is talented or interested in something, s/he probably has some prior knowledge of it, even if it’s subconscious. Adding a conceptual framework to that knowledge will not take a lot of effort as the learner (subconsciously) already understands or has a ‘gut feeling’ regarding the phenomenon of interest. The individual’s conceptual framework serves as a personal confirmation and becomes the key to making him or her consciously competent (Reeb-Gruber et al., 2009). In support of this assertion, it may be argued that “[s]cientific discoveries don’t exist without a curious mind that refuses to let itself be restricted by impossibilities. Learning starts with curiosity, with investigating hypotheses oneself and believing in the possibilities” (Hart, 1983, p. 19).

Although DCP holds extraordinary promise, it poses some significant challenges with regard to implementation and acceptance within the educational community as well as acceptance outside the
educational community. And these challenges are rooted in the starting point of DCP vis-à-vis expectations for the learners’ acquisition of competencies that are valued by educational institutions and their external stakeholders. External stakeholders such as governmental units, accrediting agencies, prospective employers, licensing organizations, and society at large have a vested interest in students acquiring valued competencies. But how can educational institutions ensure that these valued competencies are developed through DCP when its starting point is each student’s individual interests, curiosities, and talents? A very formidable challenge associated with the starting point of DCP is ensuring that students acquire the competencies that are valued by the external stakeholders. Without those assured outcomes, any DCP-based program could experience diminished or eliminated governmental funding, denial of accrediting agency approval or revocation of existing accreditation, diminished interest of prospective employers who are looking for new talent, and students struggling to pass licensure exams (such as accounting or engineering).

In order for the promise of DCP to be realized, educators must effectively bridge (a) the starting point of students’ interests, curiosities, and talents, and (b) the end point of the competencies desired by educational institutions and their external stakeholders. Skeptics would likely argue that creating this bridge presents a difficult, perhaps even insurmountable, set of challenges to be overcome. We believe, however, that such arguments are rooted in loyalty to TCM and/or LCM, primarily the former, rather than in the challenges inherent to creating this bridge.

This paper explores and counters three major arguments that skeptics might offer regarding the creation of an effective bridge between the DCP starting point of students’ interests, curiosities, and talents, on the one hand, and the competencies they are expected to acquire, on the other. One crucial argument of the skeptics is that undergraduates are not able to make wise choices regarding their professional future (skeptics now are also using popular translations of findings from neuro scientific research to make this point). Another prime argument of skeptics is that students need structure from ‘experts’ (i.e., teachers) to actually learn. A third argument is the necessity for educational institutions to set the bar regarding the content of what is learned in order for diplomas or degrees to have societal value (as opposed to setting the bar regarding the level of what is learned), with the certificate (i.e., ‘the piece of paper’) being the key to opening career doors (as opposed to the person holding that certificate being the key). Each of these arguments is explored and the authors describe how proponents of DCP can respond to them in order to increase the probability of the Development Centered Paradigm being utilized for transforming education at all levels — and especially higher education.

**Argument 1: Undergraduates Are Unable to Make Wise Choices about Their Professional Futures**

According to this argument, undergraduate students, because of their relative lack of experience, are not in a position to know what they need to know in order to have viable professional futures. All educators are familiar with students’ complaints about specific courses or topics therein being irrelevant to their future work lives. “When will I ever use that?” is a not-uncommon question — and ‘that’ differs depending on the field of study being pursued by a given student. The standard response to this question is some variant of “a person needs a well-rounded education in order to be prepared for whatever opportunities and challenges arise in the future.” Although students may/do not have certain knowledge of their content needs with respect to their future professional lives, they are more likely to acquire that needed knowledge when learning occurs naturally, is intrinsically motivated, is self-determined, and is relevant. And all of these characteristics are consistent with a DCP-based approach to education.

Hall (1977/1981), for instance, provides several interesting observations regarding natural learning. First, learning is a human’s way of growing, maturing, and evolving (Hall, 1977/1981, p. 207). Second, people of all ages have the capacity to learn naturally (Hall, 1977/1981, p. 35) by exploring their environments in the context of their evolving interests, curiosities, and talents. Third, “learning is absolutely necessary to insure the survival of the individual, and the culture, and the species” (Hall, 1977/1981, p. 207). Fourth, the human sexual drive and the human learning drive are very similar in the power they exert over people’s lives (Hall, 1977/1981, p. 207) — both drives are natural urges and compel people to act in energetic ways to achieve satisfaction. Fifth, many individuals learn better by teaching others than by listening to professors (Hall, 1977/1981, p. 208); in other words, self-directed, active engagement in facilitating another person’s understanding can be much more beneficial for one’s own learning.
Natural learning is intimately connected to intrinsic motivation, self-determination, and relevancy — and these three are intertwined with one another. All human beings are naturally curious and enjoy learning (Wlodkowski & Ginsberg, 1995, p. 24), and “[h]ow learners feel about the setting they are in, the respect they receive from the people around them, and their ability to trust their own thinking and experience powerfully influence their concentration, their imagination, their effort, and their willingness to continue” (Wlodkowski & Ginsberg, 1995, p. 2). In such an educational climate, intrinsic motivation can emerge because people are self-determined and engaged in relevant and challenging experiences that enhance their effectiveness regarding what they value (Wlodkowski & Ginsberg, 1995, p. xiii); in short, “people can be authentic and spontaneous and can accept full responsibility for their actions” (Wlodkowski & Ginsberg, 1995, p. 62). When people are interested in a particular phenomenon or subject they start making choices about how to pursue that interest, which in turn leads to their need for self-determination—that is, being the origin of their own behavior and feeling free to pursue their chosen course of action (Wlodkowski & Ginsberg, 1995, p. 113). Logically, that self-determined, chosen course of action will be relevant to the learner’s goals and values, which, when translated into educational approaches, recognizes that “education [for all learners] is inherently and inevitably an issue of human goals and human values” (Gardner, 2008, p. 13).

The learning of young children provides powerful evidence in support of the interconnections among natural learning, intrinsic motivation, self-determination, and relevancy. As Bransford et al. (2000, p. 102) argue, youngsters learn both in intentional learning situations and in situations where external pressure to improve is absent and there is no feedback or reward other than self-satisfaction. The challenge for educators at all levels is to capture the interconnected impact of natural learning, intrinsic motivation, self-determination, and relevancy that is so evident with young children and bring those features into the educational approaches being used in primary, secondary, and higher education.

According to Bransford et al. (2000, p. 102), one of the major challenges facing educators is to harness children’s natural motivation to explore, understand, and succeed — and to do so in the service of learning. This challenge may become more profound the older the learner becomes. For instance, Sousa (2006, p. 50) asserts that “[t]he enormous size and the strict separation of secondary curriculum areas do little to help students find the time to make relevant connections between and among subjects. Helping students to make connections between subject areas by integrating the curriculum increases meaning and retention, especially when students recognize a future use for the new learning.” If this is true of secondary education, it probably is even truer of higher education; indeed, the greatest challenge to change may exist in higher education — and perhaps the greatest need for such change may reside there as well.

Capitalizing on the interplay of natural learning, intrinsic motivation, self-determination, and relevancy in order to foster students’ preparation for their professional futures will require some profound transformation of the educational enterprise. Educational approaches must use “students’ present reality as a foundation for their further learning, rather than doing away with or belittling what they know and who they are” (Banks & McGee Banks, 2007, p. 433). In addition, students can be collaborators in curriculum development, which can help promote their learning; by doing this, educational institutions can begin to capitalize on resources of legitimate knowledge that have been overlooked (Banks & McGee Banks, 2007, p. 433). Resisting this needed transformation can have detrimental consequences — a point that can be reinforced with Gardner’s (2008, p. 83) observation that “[t]here is a reason why so many famous creators hated or dropped out of school — they did not like marching to someone else’s tune (and, in turn the authorities disliked their idiosyncratic marching patterns.” We believe that undergraduates — at least some of them and perhaps most, if not all, of them — can and should have meaningful input into the educational content and approach used in their preparations for their professional futures. Such input is rendered meaningful, in large part, through the influence of the students’ interests, curiosities, and talents, as well as their natural learning, intrinsic motivation, self-determination, and seeking of relevancy. If students like these are but a subset of all students, perhaps they are truly the ones who have the greatest prospect of becoming society’s best and brightest!

**Argument 2: Students Need Structure from Experts**

Proponents of TCM, in particular, and to a lesser extent, proponents of LCM assert that experts must provide structure in order for students to learn. In TCM the entire curriculum and course content is structured by the teachers/professors. In LCM the teachers/professors define the curriculum and course objectives and select the problems/projects that are intended to lead to the achievement of these objectives,
and the student are charged with solving the problem or executing the project, while along the way learning the material that is necessary for successful completion of the problem/project. Both TCM and LCM impose substantial structure from experts — more so with TCM than LCM. Interestingly, however, Sousa (2006, p. 92) advises that only a quarter to a half of actual class time should be teacher centered.

Excessive structure is not without its risks and costs. For instance, in the United States the educational system predominantly rewards students who are highly articulate and mathematically inclined, with little pay-off for other academic skills. This structural bias can be a disservice to students who are intelligent and have talent but their particular skills do not fit the system — a system that, interestingly, was originally modeled after the Prussian Army by Horace Mann, when he was the first commissioner of education in Massachusetts (Hall, 1977/1981, p. 208). The potential negative effects of the propensity to provide students with structure are also manifest in European education. Hall (1977/1981, p. 190) asserts that in the process of ‘institutionalizing’ learning, the educational process has produced great affronts to the basic nature of human beings.

Whether American education or European education, or education in many other parts of the world, students often take a superficial approach to their learning when TCM is used. When teaching focuses on the teacher’s role and the transmission of knowledge, students’ learning focuses on memorization and reproduction of material on exams (Ryan & Carroll, 2005, p. 15). “Success, achievement, and performance are primarily measured by tests and coded with grades, vastly overshadowing the quality of experience of the learner. This perspective frequently forces learners to fit an extrinsic criterion in a prescriptive manner, often sanctioned through the process of educational design” (Wlodkowski & Ginsberg, 1995, p. 166). Moreover, if students “can do well what many schools require, the mind that results from this process is one with little experience in creative thinking and solving real-life problems” (Hall, 1977/1981, p. 199). Unfortunately, modern education — whether of the TCM variety or LCM variety — has imparted the illusion “that real learning goes on in the school, and that if it doesn’t happen in a school or under the aegis of a school (like the year abroad), it has no validity” (Hall, 1977/1981, p. 35).

The propensity for educators to impose undue structure can be countered by ensuring that two features — intrinsic motivation and the opportunity for ‘play’ — are part and parcel of a DCP application. Both of these features naturally occur with youngsters and their learning process. Gardner (2008, p. 84) points out that young children, before the age of formal schooling, need little pressure toward creative exploration; when they are exposed to even a modestly supportive environment, youngsters are intrigued by multiple experiences, phenomena, topics, and questions. Moreover, youngsters persist in their creative explorations — even absent encouragement from others or material rewards — because of their intrinsic motivation to learn. Sousa (2006, p. 65) asserts that recent research has validated longstanding beliefs that student motivation is the key fostering learning and that “learning occurs best when the learner is intrinsically motivated.” Play also assumes a significant role in learning — not only with youngsters but with maturing individuals. “The failure to understand the significance of play in maturing human beings has had incalculable consequences, because play is not only crucial to learning but (unlike other drives) is its own reward” (Hall, 1977/1981, p. 204). Further, “[o]ne of the greatest faults in modern education is over-structuring, which does not allow for play at every point in the educational process” (Hall, 1977/1981, p. 204).

As Gardner (2008, p. 84) asserts, “[t]he challenge to the educator is to keep alive the mind and sensibility of the young child” — effectively addressing this challenge is essential to realizing the potential of DCP. And with such transformation, educators might expect to realize some of the profound and revolutionary implications of brain holography and culture as articulated by Hall: “Good-by, compartmentalization of knowledge. Good-by, subjects presented without reference to context. Good-by, periods, quarters, semesters, and time-slicing” (Hall, 1977/1981, p. 196). Moreover, “[p]eople who know their desires and work to achieve them, whose feelings, thoughts and actions are congruent with one another, are people in a euphoric state of being” (Wlodkowski & Ginsberg, 1995, p. 164). Excessive structure, imposed by experts upon students, restricts the opportunities for those same students to experience a euphoric state of being.
Argument 3: Educational Institutions Must Determine Curricular Content in Order for Diplomas or Degrees to Have Societal Value

A major concern about DCP starting out with students’ interests, curiosities, and talents is how to ensure that students will acquire competencies that are valued by professional licensing bodies, accrediting agencies, prospective employers, and society at large. Must educators themselves determine what students should learn and how they should learn it in order to satisfy external stakeholders? Or is there room for students’ self-determination — at least to some meaningful degree — in what they learn and how they learn it, while still acquiring competencies that are necessary for licensure, accreditation, etc.? For DCP to be viable, a meaningful degree of self-determination must exist both with respect to outcomes achieved and the process of achieving those outcomes. As Wlodkowski and Ginsberg (1995, p. 26) have stated, “traditional teach-and-test methods and training programs based on the assumption that people can be motivated by external events are unlikely to work with large segments of our population.”

According to Banks and Banks (2007, p. 403), education should build on what students have when they enter society’s schools. This advice reasonably applies to entry at all levels of education — primary, secondary, and higher education — and clearly reflects the interests, curiosities, and talents that students bring to the educational enterprise. Students learn best and are more motivated when curriculum reflects the students’ cultures, experiences, and perspectives (Banks & McGee Banks, 2007, p. 248) — and when there is a meaningful level of self-determination. “The norm of self-determination means the educational community accepts and understands that the entire academic process of learning, from content selection to accomplishment and assessment of competencies, encourages learners to make real choices based on their experience, values, needs, and strengths” (Wlodkowski & Ginsberg, 1995, p. 119).

Building on students’ interests, curiosities, and talents in an environment of meaningful self-determination requires educators to assume a different role in the process. As Wlodkowski and Ginsberg (1995, p. 25) have observed, educators effectively influence students’ motivation, not through extrinsic means, but through coming to know the students’ perspective and drawing forth the attributes that students naturally and culturally possess. They continue, “[a]s teachers we may affirm, support, or encourage their motivation, but it is they who are in charge of themselves, and through sharing our resources with theirs we can together create greater energy for learning. Such a learning environment is neither teacher-centered nor learner-centered but more community-centered, with the teacher serving the agreed-upon leadership role” (Wlodkowski & Ginsberg, 1995, p. 25).

Building on students’ interests, curiosities, and talents and incorporating self-determination requires a different educational approach — one that significantly challenges the status quo. “Particularly in institutions where other departments and program areas conform to a more traditional mode, learners will often find it unsettling, inconvenient, and annoying to be asked to work as self-directed learning partners in some kind of negotiated learning project. […] initially, at least, there may be substantial resistance. […] faculty must make implicit from the outset the rationale behind the adoption of these techniques” (Brookfield, 1986, pp. 82-83, as cited in Wlodkowski & Ginsberg, 1995, p. 132). In other words, a key element in successfully fostering DCP-based learning involves preparing students for a different educational experience — one in which the students assume much greater responsibility for their own learning, building on their interests, curiosities, and talents, while simultaneously developing the competencies they must possess in order to be effective and successful in their personal and professional lives.

Central to demonstrating that students have acquired societally-desired competencies is the thorny issue of assessment. Licensing bodies, accrediting agencies, and prospective employers must be satisfied that graduates are acquiring specified competencies. However, the acquisition of these desired competencies need not be antithetical to students’ natural interests, curiosities, and talents, or to their self-determination. Indeed, “[t]he outcomes of assessment in the form of grades and quantitative scores powerfully influence self-determination, self-worth, and the access of learners to careers, further education and financial aid. Therefore, evaluation criteria are extremely relevant to developing or inhibiting a positive attitude towards learning” (Wlodkowski & Ginsberg, 1995, p. 127).

A key to resolving the assessment dilemma seems to be how it takes place. Two examples — learning contracts and portfolios — should suffice to demonstrate how this dilemma can be addressed. “Learning contracts are considered by practitioners in this field to be a significant means of fostering and providing for self-direction in learning. They are an effective technique for helping students pinpoint their learning interests, plan learning activities, identify resources that are relevant, and become skilled at self-
assessment” (Wlodkowski & Ginsberg, 1995, p. 132). Portfolios provide students with an opportunity to be “actively involved in a structured assessment process by providing evidence that they have mastered goals established by faculty or the institution. … Portfolios also empower students and enhance their motivation to learn and achieve — the evaluation feedback that they receive about their learning performance is a powerful tool that can strongly affect effort and attitude” (Branche et al., 2007, p. 26).

Both learning contracts and portfolios encourage active engagement of students in the learning process. Such active engagement “involves choices and actions that the learner finds pleasurable and effective for developing an understanding of the big picture as well as the relationships between and among the components of the learning objective. This approach stimulates intrinsic motivation and interest” (Sousa, 2006, p. 65). Further, Sousa (2006, p. 66) argues that educators should actively engage their students in developing competency assessment criteria and give them choices in selecting learning activities and questions to pursue in order to acquire said competencies.

The bottom line question is this: Is DCP-based education — an approach that incorporates students’ interests, curiosities, and talents, as well as their appropriate self-determination — really needed in curricular design and implementation? Gardner (2008, p. 10) cites two legitimate reasons for undertaking new education, such as approaches based on DCP: (1) current practices are not actually working, and (2) conditions in the world are changing significantly. Educational change is needed to broaden opportunities for people to realize their full potential. As Hall (1977/1981, p. 5) has argued, “perhaps the most devastating and damaging [thing] that can happen to someone is to fail to fulfill his potential.” Hall (1977/1981, p. 183) also asserts that “in the future, educational systems will be examined for what they do best rather than be evaluated by some culture bound theory that is supposed to apply to all peoples.” And Bransford et al. (2000, p. 133) maintain that “[s]ociety envisions graduates of school systems who can identify and solve problems and make contributions to society throughout their lifetime — who display the qualities of ‘adaptive expertise’”.

Concluding Observations
Stories abound regarding students who aren’t motivated to learn and who are just out to get their credits with the least amount of effort possible (including plagiarism if it suits their purpose). Usually, teachers and administrators use this ‘fact’ to justify keeping TCM alive (and even to kill LCM or other innovations, like DCP). One of the counter-arguments is that TCM has played a powerful role in creating unmotivated (even cheating) students. In TCM, teachers structure everything for the students who just have to sit and consume; there is no incentive for them to do anything but figure out ways to get the credits with the least amount of effort. TCM does not speak to their innate drive to learn (at least not in the formal education setting); teachers decide what it is students should be interested in and how they should want to learn it. The students have no substantive control over their own learning process and outcomes (or inputs). At the same time, educational institutions use up whole forests to put mission statements and the like on paper in which educators say students should take responsibility for their own learning.

Giving someone responsibility for something but no control over the thing for which he/she is responsible is a certain path to demotivation. Interestingly, many educators assert that they are professionals who should have control if they are responsible for specified decisions and actions. … Isn’t it peculiarly amusing how the seemingly intertwined combination of control and responsibility often goes out the window when educators consider students and their learning process?

Of course, there are teachers who do try to break out of the TCM mold, but students who have grown up with TCM might abuse innovation more than they appreciate it. Consider the following: If decisions have been made for you all your life, you spend that life rebelling and wanting to make those decisions yourself. But then if all of a sudden you get freedom of choice, one of two things happen — you either crawl under a rock and wait for someone to tell you what to do or you consider ‘milking the situation while it lasts’. Students who are accustomed to TCM don’t know how to act responsibly within a LCM context, much less a DCP context.

If students had been exposed to DCP from the onset of their formal education and all educators based their educational activities on the DCP philosophy, students would naturally know that they have to take responsibility for and control of their learning process. In short, they would know that their natural, pre-formal education learning process would continue into and throughout their formal education. The reality, however, is that too few students are exposed to DCP-based approaches to education. This is why the educators who embrace the DCP philosophy need to understand and challenge the three arguments
presented in this paper — namely, that undergraduates are unable to make wise choices about their professional futures, that students need structure from experts, and that educational institutions must determine curricular content in order for diplomas or degrees to have societal value.

DCP is not wishful thinking as TCM proponents might argue. Indeed, we offer two examples of DCP-based applications that demonstrate the power of this approach. One example involves fourth year undergraduate students in Marketing at INHOLLAND University of Applied Sciences; these students were invited to ‘design’ their own fourth and final year of the program. The only structure that the program provided for them was a competency chart for a starting Marketing professional and two coaches. These students graduated months in advance of the other students — and did so with honors. The other example concerns the Sudbury Valley School system — a democratic, or free, school. In the SVS system, children as young as four years of age design and implement their own learning process. The only things provided for them are a building, a basic behavioral code, and a few adults for guidance when necessary. Many alumni of the SVS continue to lead happy and fulfilling lives with excellent careers (Greenberg et al., 2005). We’ve had the opportunity to visit one such school and were amazed at the maturity and level of independent thinking children at this school exhibited.

Under DCP students will make mistakes, of course, but they will confront them rather than running away from them or trying to hide them; students will do this because direct confrontation benefits their learning. DCP-based Assessment would be completely different too: it wouldn’t be about achieving a desired result determined by others; rather, it would be about being the best that a person can be — and then trying to be even more. DCP recognizes that the drive to learn is innate; we humans can’t switch it on and off. Rather, the drive to learn — for each and every human being — is about survival, about making one’s mark on the world, and about taking personal responsibility for and control of one’s own learning. Of course, people can choose not to learn; they are free to decide, to exercise control, and to take responsibility. However, since learning is innate to the human species, we suggest that learning is much easier than resisting learning. In a sense, learning is the “path of least resistance”—a path that humans are naturally inclined to follow, and a path that DCP can nurture, provided the formidable challenges discussed herein are properly and effectively addressed.

References
Two Options – One Virtual World: Does it make a difference whether we talk or chat in SecondLife?

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Abstract: Universities are continuously looking for new ways to teach their students. Here, SecondLife (SL) has become an extremely popular medium in recent years, as it has been suggested to provide a student-centered immersive virtual environment, unlocking creative problem solving and offering a deeper level of collaborative learning. However, although the synchronous communication within SL has been found to contribute to the learning experience of students, the vast majority of work has not differentiated between text-based and voice-based communication. This paper suggests an experiment, where 160 undergraduate students are randomly assigned across two cohorts into small groups. Cohort 1 will discuss a problem statement in SL using the text-based chat, while Cohort 2 will discuss the same statement via voice-chat. By measuring students’ expectations, perceptions, motivations and activity levels, this experiment can provide valuable insights on what type of communication type is effective and for what type of participant.

Introduction
For decades, marketing education has been rather static, with a limited amount of interaction and a focus on theory rather than practice and skills. Although a lot of knowledge can be gained from studying textbooks and attending lectures during marketing courses, the practical application of this knowledge is difficult. Despite the prevalence of student projects and practical assignments, a gap between theory and practice exists affecting the quality of academic education. This holds especially for educational activities related to brand and advertising management, in which a balanced approach between studying theoretical concepts and experiencing real-life branding consequences is essential. Generally, academic education can be structured in terms of an input – process – output system (e.g. Nooriafshar, 2005). In marketing courses, a substantial amount of time and effort is devoted to the first step of the process (input), in which theoretical knowledge, concepts and principles are being taught to students. Yet, it is the second and third step which allows assessing whether students fully understand the knowledge gained in a course and whether they possess the necessary skills to use that knowledge in tackling real-life challenges. Unfortunately, these last two steps (process and output) are often neglected in marketing courses, resulting in a lack of balance between theoretical principles and practical relevance. Integrating virtual worlds, such as SecondLife, into academic education can potentially bridge this gap and provide opportunities for enriching student experience by providing an authentic context. In line with the notion of ‘situated learning’ (Brown, Collins & Duguid, 1989), the latter has been indentified as a success factor for learning, irrespective of the educational tools being used (Billet, 1996; Hung & Der-Thanq, 2001)

When considering computer supported collaborative learning (CSCL), numerous researchers have found evidence that synchronous communication is superior to asynchronous communication in establishing an active and vibrant learning environment (Beers, Boshuizen, Kirschner & Gijselaers, 2007; Giesbers, Rienties, Gijselaers, Segers & Tempelaar, 2009). However, in case educators choose for synchronous communication, only limited evidence is available on which type of discourse, text-based chat or voice-based chat, is preferred among students. Gaining insights on this aspect is especially important when considering virtual worlds, such as SecondLife (SL), where both options are available and supported. On the one hand, one can argue that text-based communication provides equal opportunity for everybody’s ideas to be heard, and might encourage less outspoken people to speak out and help them to bring out their ideas. On the other hand, voice-based communication offers a setting in which students can engage into a
more fluent, faster and more natural type of discussion. Taken together, it can therefore be hypothesized that individual preferences and motivations will have an impact on the way the chosen type of synchronous communication is perceived. Consequently, this paper sets out to investigate the overarching research question of “Is there a difference in students’ perceived usefulness of discussing a problem statement depending on whether synchronous text-based, or voice-based communication is used in SecondLife?”

SecondLife

Gartner has predicted that by the end of 2011 80% of all active internet users will have a presence in a virtual world (Pettey, 2007). This indicates the importance of being present in a virtual environment. Companies and educational institutions are using virtual environments more and more. In fact, 80% of all UK universities have a presence in a virtual world and over 300 educational institutions are present in SL. At this stage, it should be noted that there are two broad types of virtual worlds. On the one hand there are Massive Multiplayer Online Role-playing games (MMORPG’s), which are goal-directed games. Popular examples include Everquest, Guild Wars and World of Warcraft. On the other hand, environments such as SL exist that constitute open-ended social virtual worlds. Admittedly, the line between the two is often blurred, particularly as “goal-directed games always emerge inside social virtual worlds” (Smart, Cascio & Paffendorf, 2007, p. 7). However, it can be stated that SL, which is the focus of this paper, places a greater emphasis upon social networking including live chat, sharing resources and swapping multimedia content. Building up on this, Bignell & Parson (2010) have argued that SL can provide a student-centered immersive virtual environment that helps to unlock creative problem solving and offer a deeper level of collaborative learning. Students are encouraged to think “outside-the-box” and empowered to do so by giving them access to a highly customizable, safe and fun environment, which offers more interactive possibilities than virtual learning environments (VLEs). Furthermore, Holmberg and Huvila (2008) stipulate that the use of SL notably benefits educational activities by allowing for a sense of physical presence of avatars (digital persona) in the learning environment, real time communication, and the existence of a shared local space. These features create a more realistic feel of presence than tools provided by VLE, namely discussion forums or chat rooms. Additionally, Ondrejka (2008) indicates that some students experience a greater level of comfort in asking questions, and are therefore better able to develop a sense of shared learning. According to Mason (2007) students are more engaged in learning tasks and spend more time thinking and discussing the subject material.

More specifically, by conducting educational activities in SL, students will experience a new sense of openness, where they can pro-actively contribute to the shape of the environment in which they learn. This openness can stimulate higher degrees of engagement in learning tasks (Mason, 2007) and creativity in collaboratively finding possible solutions (Conway, 2007), in comparison to regular face-to-face education. Furthermore, from the point of view of supervisors and teachers, the incorporation of SL in the curriculum can foster the replication of real-world environments, or the creation of event simulations that would otherwise be very difficult to logistically administer, or to achieve in general. Even more so, researchers have stipulated and found empirical evidence that teaching in a 3D virtual world very much supports the creation of social and immersive experiences (Bronack, Riedl & Tashner, 2006; Dede, Brown-L’Bahy & Whitehouse, 2002; Dickey, 2005a, 2005b), which in turn contributes to the enhancement of students’ learning experience (Veletsianos & Miller, 2008). Additionally, staff involvement and student bonding can be enlarged by implementing virtual worlds in education (results from the research among the Second Life Brand Management team)

Bridging the gap between theory and practice

The ability of textbooks to illustrate the dynamic nature of external factors influencing a theoretical principle has been proven to be rather limited. Without ever experiencing the challenges real life imposes, however, students will be completely unprepared for the many situations real-life presents in which a straightforward application of a theoretical concept simply does not work. Students would have to engage in activities that provide them with practical knowledge and skills in order to bridge this gap between theory and practice. Ideally, practical knowledge and skills are gained by means of “real-life experiences”, e.g. by doing an internship in the area of content of a firm or by actually being responsible. The problem, though, is that those options are rather time consuming and in practice do not always provide students with the practical insights they were hoping to gain. Besides that, by engaging in these kind of activities students are most likely to end up with a study delay, a situation often backfiring at them when applying for a job.

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A very promising approach to narrow the gap between theory and practice regards the usage of simulations in class. Milligan (1998) argued that knowing relevant theory is not enough if it cannot be put into practice. Simulation or role play can play an important role in this process. Generally speaking, simulations rely on the principles of behavior modeling for influencing performance (Murthy, Challagalla, Vincent & Shervani, 2008). Bolt, Killough & Koh (2001) find that behavior modeling is superior to lecture-based training for complex tasks and Murthy, et al. (2008) provide evidence that behavior modeling is effective in teaching a wide range of skills and competences. Typically, simulation is used to provide students with “real-life” experience by taking advantage of the ability of simulation to mimic reality. The so-called existence of realistic context has been found to lead to more elaborate processing enabling access to declarative and procedural knowledge. This, in turn, results in superior transfer of skills and behaviors (Anderson 1995; Yi & Davis 2003). Furthermore, the presence of built-in feedback has been shown to accelerate the learning process by means of vicarious learning (Murthy et al. 2008). Providing students with feedback in simulation games facilitates cognitive organization and knowledge retention, and establishes connections to previously learned skills and competences (Murthy et al. 2008). Besides that, simulation offers students a paced learning experience; hence it offers learners to go through the learning process at their own pace. Consequently, simulations seem to be a promising and effective means to bridge the gap between theory and practice and should therefore be integrated into academic curricula.

In this context, SL has been an extremely popular medium in recent years, as it has been considered to provide “a social laboratory where role-playing, simulations, exploration, and experimentation can be tried out in a relatively risk-free environment” (Graves, 2008, p. 50). Yet, despite the well documented potential benefits of using SL in higher education, a lot of the available evidence remains anecdotal and descriptive (Livingston & Kemp, 2006). Moreover, although numerous researchers have stipulated that synchronous communication within virtual environments, such as SL, has contributed to the learning experience of students (e.g., de Freitas, 2008), the vast majority of work has not differentiated between text-based and voice-based communication. Additionally, while case studies have suggested that the communication styles of participants can differ and therefore have an impact on the flow and intensity of communication, these findings have not been taken up to further investigate whether a participant’s preferences and motivation can explain observed communication patterns. Consequently, this paper will address these shortcomings by suggesting an experiment that specifically aims at identifying what type of synchronous communication might be more effective and for what type of student.

Setting
This paper suggests a research experiment to be implemented for approximately 160 students, as part of their regular undergraduate course on brand management at a Dutch university. The course is positioned in the marketing major of an International Business program and is designed to provide students with in-depth knowledge about various branding concepts as well as several important aspects of marketing communication. As part of the course, students are divided into small groups of approximately 5 members, who then collaborate on a branding assignment. This assignment requires the groups to design their own product and sell it to their fellow students within Second Life. To stimulate other students to buy their product, the groups had to promote their products using the concepts and theories discussed during the course. In order to facilitate students in this process, among others, weekly lectures are organized that introduce and explain the main underlying concepts and provide case studies that help students to put the theory into perspective. Moreover, in order to support them in their assignment, a number of tutorials are organized that help them to create a SL account, find their way around and make use of the most essential functionalities in SL, including communicating with others.

The suggested experiment will be based on one of the regular lectures. At the end of the applicable lecture, the teacher will provide a problem statement that students will have to discuss. These discussions will be organized directly after this lecture in small, randomly assigned groups, of five to six participants. These groups will then be subdivided into two cohorts. Cohort 1 will discuss the statement in SL using the text-based chat option. Cohort 2 will discuss with the help of SL’s voice-chat functionality. Both cohorts will have one hour to complete this task. After the set time has elapsed, all subgroups will meet again in a plenary, face-to-face setting and share their findings and results with their colleagues.
Instruments

**Expectations and goals before the start of the experiment**
Before the start of the experiment, participants will be asked about their expectations and goals via a questionnaire. This instrument was based on a previous version developed at Maastricht University (Giesbers, Rienties, Gijselaers, Segers & Tempelaar, 2009; Rehm, 2009; Rienties, Tempelaar, Waterval, Rehm, & Gijselaers, 2006). The questionnaire will consist of 24 questions, subdivided into four categories, and is administered with a 7-point Likert scale ranging from 1 (not true for me at all) to 7 (completely true for me). The four categories are similar to the ones developed by Rienties et al. (2006), will be adjusted to fit the context of SL and will include (the number of questions are reported in brackets): ‘Reasons to join the experiment’ (6), ‘Experiment design’ (4), ‘Expectations and goals’ (10) and ‘Group collaboration’ (4).

**Academic Motivation Scale**
To estimate the potential impact of student motivation on the perceived usefulness of the applicable type of communication, and in line with previous research suggesting that academic motivation can have an influential impact on learning processes (Giesbers, et al., 2009; Rienties, Tempelaar, Van den Bosche, Gijselaers & Segers, 2008), the individual contextual motivation for education will be measured using the Academic Motivation Scale (AMS) (Vallerand et al., 1992).

**Participants’ perception after the experiment**
After completion of the experiment, participants’ satisfaction will be estimated also via a questionnaire. Similarly to the pre-evaluation, this instrument constitutes an adapted version of an instrument specifically developed to evaluate innovative learning initiatives at Maastricht University (Giesbers et al., 2009; Rehm, 2009; Rienties et al., 2006). The questionnaire consists of 32 questions, subdivided into six categories, and is again administered with a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The six categories include (the number of questions are reported in brackets): Experiment design (6), Community of Learning (6), Group collaboration (4), Goals and tasks (4), Instruction (6) and Learning Satisfaction (6). Finally, the questionnaire will include open questions for comments.

**Expected Results**
We expect to find that students using voice-based communication (cohort 2) will be more active than their text-based counterparts (cohort 1), because their medium of communication will make them feel more at ease in discussions because of the lack of technical boundaries (e.g. having to type). In contrast, text-based chat, although being more immediate than contributions to discussion forums, is expected to still inhibit students to fully and fluently engage into discussions (Giesbers, et al., 2009). Furthermore, in line with previous research on academic motivation in computer supported collaborative learning (e.g., Rienties, et al., 2009), we expect to find difference in levels of activity depending on the prevalent type of academic motivation of individual students.

In terms of expectations and perceptions, we expect our results to be in line with previous research in the field of Second Life and Higher education (Belei, et al., 2009). Referring to the Maastricht University Brand Management course, teaching in an online world has been proven to be very successful on several dimensions. Belei and colleagues found, in a first analysis of the quantitative data collected, a very positive picture about the usability of Second Life in academic education. Results indicated that indeed Second Life was perceived to be appropriate to translate knowledge into practice, that students preferred a virtual project over writing a written report, besides that students found using Second Life in education very enjoyable and fun.

**Limitations and Future Research**
This paper exhibits a number of shortcomings that should be taken into account when considering the claims and suggestions. Firstly, at the time of writing the paper, the indicated experiment still needs to be implemented. Consequently, we can only formulate our expectations about the possible results that we might find. Second, referring to the bases of our research theory, one could argue that other dimensions might also have an impact on perception or activity patterns. Third, in terms of our experimental setting, the fact that it is solely based on quantitative, descriptive statistics might limit the outcome range of this experiment. Besides that, we are unable to fully exclude face-to-face contact during the experiment setting.
It might occur that participants interact in real life (e.g. talking to each other) while participating in the experiment, the effects of this face-to-face communication will and cannot be accounted for in our measurements. Additionally, given the “one-shot” setup of the experiment, initially focusing on only one event, it is reasonable to assume that we will only be able to capture a small fraction of the actual underlying relationships. Future studies should strive to design experiments that are conducted on numerous occasions over a longer period of time. Such a more longitudinal type of analysis would strengthen any possible research findings.

References


During the last few years economics and business education have emerged as one of the largest fields of study in higher education. Simultaneously, the pressing concern for improving the quality of higher education in these fields has led to a definite need for more knowledge about effective instruction methods and tools, as well as about innovation (in terms of both methodology and contents). This has been the background to establish a network to disseminate the results of the efforts undertaken by researchers and professionals in the field of educational innovation. "EDiNEB", established in 1993, is such a network.

The acronym EDiNEB represents two entities: the EDiNEB Network and the EDiNEB Foundation, where the prior is an international network/association of people and/or institutes that are considering the implementation of educational innovations in economics and business and the latter is a legal personality under Dutch laws registered in Maastricht.

The general aim of the EDiNEB Network is to provide mutual support to member institutions who wish to adapt their curriculum to highly innovative programmes. There are three primary goals: strengthening of membership institutions in their realisation of innovative programmes; strengthening of faculty capacities related to innovative education; development of technologies, approaches (such as problem-based learning), methodologies and tools appropriate to curricula; emphasising applied economics to domestic situations, or curricula especially designed for developing countries focusing on (local) societal needs, or curricula with an orientation to skills training; problem-solving or professional practice. Strategies to achieve these goals can be summarised as follows: Emphasis on institutional support and capacity building through exchanges, dissemination of information, improved communication and publications; Emphasis on partnerships between universities; Focus on research and development, in particular regarding questions of relevance to education in economics and business administration.

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