Conclusions
Exchanges and visits are not new, but this may be the right time to start using them more than we have in the past as a way of invigorating home and host institutions, sharing good practice and developing networks. For individuals they offer the opportunity to refresh practice, to broaden the mind to new possibilities and to create the opportunity for future collaboration. As each of the participants in this study has shown, it is possible for an individual to make this happen on any scale from a couple of weeks or less, to as long as two years. Although the participants in this study all went overseas, it is not vital for these visits or exchanges to be on an international scale; it can be very enlightening to get ‘under the skin’ of another institution, even if in the same city.

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New approaches to doctoral supervision: implications for educational development

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When I was first invited to do some research to find ways of developing doctoral supervisors, I found that much of the literature about doctoral supervision has concentrated on describing the ever-lengthening lists of functions that must be carried out. This functional approach is necessary, but there was less exploration of a different paradigm, a conceptual approach towards research supervision which might make it easier for supervisors to look at the underlying themes of how they could approach different situations. This article reviews and updates a framework for supervision which aimed to fill this gap, and looks at some of the implications for applying it.

Models of supervision
There are a number of alternative models of supervision. Grant and others have used a small number of cases of masters and doctoral supervision, analysed the dialogue and described power dynamic of the Hegelian ‘Master-Slave’ or ‘apprenticeship’ models (Grant, 2005, 2008).

Another model applied to research supervision was created by Gatfield (2005) when he described a grid with two axes of ‘support’ and ‘structure’ based on the managerial Blake and Mouton model. He verified this through interviews with twelve supervisors. Where support and structure were low the academics’ style was found to be laissez-faire, and where support and structure were high, there was a contractual style. A pastoral style would mean that the academic provided high personal support but left the student to manage the structure of their research project and the directorial style would do the reverse. Gatfield argues (as I do) that no one approach is right or wrong, it is about appropriateness and sharing expectations. This model provides a useful contrast, but it applies more clearly to research supervision than to postgraduate teaching, and a four-quadrant matrix is more limiting in terms of analysis. Murphy et al. (2007) produced another four-quadrant matrix from interviews with seventeen engineering supervisors and their students (34 participants in total) which looked at guiding and controlling on one axis and person and task focus on the other. Murphy and her colleagues also make the observation that supervision models are linked to beliefs about teaching, and this is something I begin to explore later in this article.

A third, frequently described, approach was created originally by Acker who looked at the ‘technical rational model’ (where the goal is either the creation of an independent researcher, scholarly creativity or speedy completion) and contrasted it with the ‘negotiated order model’, where there are ‘many unspoken agendas operating throughout the research process and mutual expectations are subject to negotiation and change over time’ (Acker, quoted in Wisker, 2005, p. 27). This approach problematises supervision and describes a goal-driven approach, but it does not explicitly link to other forms of postgraduate teaching and provide a simple tool for analysing problems.

A fourth conceptual approach to teaching and supervising at this level is to look at the practices implied by the model of ‘communities of practice’ (Lave and Wenger, 1991), which is, in effect, offering a decentralised version of the master/apprentice role. Lave and Wenger’s work has had great impact in highlighting sociological issues implicit in teaching and learning, and they explore the way in which the student is helped (or not) to move through legitimate peripheral participation to an understanding and mastery of the tacit knowledge required to participate fully in an academic community. This element is explored further in the ‘enculturation’ approach to teaching and supervision.

One criticism of the framework proposed here is that it aims to create too much of a ‘tidy reconciliation’ of a process which is undeniably messy and individual. However, the original objective of the research project
was to identify the concepts which would make learning about supervision easier. The ‘messiness’ is still apparent when it comes to combining, blending and applying the different approaches to individual situations.

A new approach
I began the research by identifying and interviewing at some length supervisors in my own university who were recognised as ‘excellent’ by their peers and/or students. The sample grew to include supervisors at other UK universities and from the USA (where they call them advisors) and the research design is described elsewhere. A framework emerged from the analysis (Lee, 2008a and b) and it has been tested now with groups of supervisors at universities in the UK, Sweden, Denmark, South Africa and Estonia.

Findings
Five main approaches to supervision were identified. They intertwine in a complex manner and, although they are disentangled here to aid clarity, I do not maintain that they are independent of each other.

The framework is integrative in that it includes organisational, sociological, philosophical, psychological and emotional dimensions. Table 1 describes the original framework as it has been applied to doctoral supervision, looking at the supervisor’s activities, knowledge and skills and hypothesising potential student reactions.

There are several relevant areas of literature which illuminate this framework:

Functional
This approach appears in a series of guides to effective supervision (Wisker, 2005; Eley and Jennings, 2005; Taylor and Beasley, 2005; Phillips and Pugh, 2005). They provide useful lists of tasks and vignettes, but they do not give supervisors a conceptual model to use in reflecting upon their beliefs about what supervision is about. Skills such as planning, directing, acquiring resources, getting the work done and monitoring are examples of features emphasised in this approach.

Enculturation
In this approach learning is seen as developing within a societal context (Lave and Wenger, 1991; Leonard, 2001; Delamont et al., 2000) and they describe the importance of becoming a member of a discipline. Indeed, Delamont et al. argued that academics identify themselves by their discipline first and by their university and department second. There are also frequent references to an apprenticeship model in this context. The research student needs to acquire a great deal of subtle professional and interpersonal knowledge about how research and academic life are conducted.

Critical thinking
Critical thinking is a western philosophical tradition that encourages analysis, looking for propositions and arguments for and against them. The roots of this approach to supervision are both dialectic and dialogic. Dialectical thinking pits various propositions or theories against each other. Dialogical thinking requires a discussion and synthesis of a series of propositions and encourages the student to look for a hidden logic. The ability to synthesise literature and make a coherent argument has been identified by thesis examiners as a key activity that the student must undertake (Holbrook et al., 2007).

Emancipation
Emancipation as a supervisory process implies both support and challenge. It is also a process which allows and supports personal transformation. Acquiring a PhD can be a transformative process; the prerequisites for transformative learning require critical reflection and a disorienting dilemma (Mezirow, 1991; Taylor, 2007).

PROFESSIONAL  →  PERSONAL

<table>
<thead>
<tr>
<th>Supervisor’s activity</th>
<th>Functional</th>
<th>Enculturation</th>
<th>Critical Thinking</th>
<th>Emancipation</th>
<th>Relationship Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisor’s knowledge and skills</td>
<td>Directing, project management, negotiation</td>
<td>Diagnosis of deficiencies, coaching</td>
<td>Argument, analysis</td>
<td>Facilitation, reflection</td>
<td>Integrity, managing conflict, emotional intelligence</td>
</tr>
<tr>
<td>Possible student reaction</td>
<td>Obedience, Organised negotiation</td>
<td>Role modelling, apprenticeship</td>
<td>Constant inquiry, fight or flight</td>
<td>Personal growth, reframing</td>
<td>A good team member, emotional intelligence</td>
</tr>
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Table 1 A framework of approaches to research supervision
Relationships
There is some evidence that poor relationships are blamed for poor completion rates (Taylor and Beasley, 2005, p. 69), and poor relationships can arise because of unarticulated and unmet expectations on both sides. Emotional intelligence has become a contested but popular phenomenon in this field (Salovey and Mayer, 1997).

Implications for educational developers
The first implication of this work relates to supervisor development. The argument is that supervisors who are aware of the strengths and weaknesses of all of these approaches to supervision, and who are able to combine approaches appropriately, will be better placed to develop their students. A typical workshop will include inviting supervisors to contribute case studies and will look at a range of potentially difficult situations, asking how a supervisor working from each approach might attempt to work through any problems and challenges. In practice a supervisor will blend approaches, but the framework helps them to do this from a knowledgeable base. This method also provides a neutral language for exploring differing expectations, both between supervisor and student and within supervisory teams.

There are universities with modular PGCerts and PGCAPs where whole modules are devoted to studying supervision, and in Sweden a higher education ordinance has ruled that all doctoral students have the right to have a trained supervisor. Consequently, Swedish universities have been running supervisor development programmes for some time, and this framework is now included in several of these types of programmes.

Secondly, we can review the framework in looking at one of the core elements of doctoral research: how does the framework encourage the development of original thinking? One analysis of how each approach might encourage creativity is shown below, and one of the more surprising elements to emerge is that the functional approach can also encourage creativity. An example of this arose in an interview with a supervisor who said:

‘I think they find the direction difficult, that I have been so directive. I think they thought that they could swan in and wander around the literature for a bit and do what they liked...so I have insisted that they are here 9am-5pm five days a week. That is very hard for them...I am beginning to think the structure helps to make creativity, I would never have believed I would have said that. I think it is because people know where the boundaries are, they know what they have got to achieve and this helps in achieving that...they are putting up (creative ideas) on the wall...there is a sense of freedom in the structure I think.’ (Supervisor: Soft Applied)

However, critical thinking can also create original thought, and another supervisor illustrated this approach when they said:

‘I have one mature student who is a senior partner in (his organisation), and it is great being his supervisor, he is so on the ball. Part of me thinks “what on earth have I got to offer him?” Then it turns out that he is breaking new ground himself and he really wants somebody else who thinks in very bizarre ways, which is what I do.’
(Supervisor: Soft Pure)

Many are used to juxtaposing the concepts of emancipation and creativity, but the reaction to constraints and criticism can also force the formation of new ideas. Table 2, below, illustrates how different approaches to supervision might encourage creativity.

A third impact of this work is to question the notion of research and teaching as separate but linked concepts. Research-led teaching is a concept which has been problematised in many ways (Jenkins, Healey and Zetter, 2007). If the five approaches can together create an holistic approach to supervision (and I accept that this is a big assumption), can the same five approaches be used to develop teaching and learning curricula for academic staff, and to evaluate the student experience of other groups of students, for example those taking a taught masters or research in undergraduate degrees? Table 3 looks at some elements of teaching masters students and maps them onto the framework.

There are some underlying assumptions about teaching and learning in this framework, and it would be interesting for academics to examine their own assumptions and core beliefs in the light of the issues presented in Table 4, where

<table>
<thead>
<tr>
<th>Creativity as constraint focused</th>
<th>Creativity as fulfilment focused</th>
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<tbody>
<tr>
<td>Functional</td>
<td>Enculturation</td>
</tr>
<tr>
<td>Creativity might arise from</td>
<td>A reaction to or resistance to constraints</td>
</tr>
<tr>
<td>(see Kleiman, 2008)</td>
<td></td>
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</table>

Table 2 Applying the framework to engendering creativity
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Table 3  Applying the framework to the student experience for a taught masters programme

they are analysed a little further.

Fourthly, we need to ask questions about the broader impact of each of these approaches on student development, personal development planning, career development and employability. Under the Concordat (Vitae, 2008) and the Joint Skills Statement (Roberts, 2002), both in Europe and the UK, there is an expectation that universities will provide a broader education at this high level. So is it justifiable to ask, for example, whether an enculturation approach encourages students to stay within the discipline and seek work within academia?

Finally, we can ask on a broader level whether the university is meeting student needs – the supervisor cannot be the person responsible for meeting all student needs. However, the doctoral student’s experience is coming more under

Table 4  Applying the framework to elements of teaching and learning

the microscope (HEA PRES surveys), so can this framework provide a tool for evaluating what we offer? There are two underlying questions. Are there needs and expectations that students bring to the university which do not fit into this framework? If this framework is acceptable, who are the people responsible for ensuring that students can meet all these different needs? Table 5, overleaf, illustrates the different expectations that students might have (and one student may have all these expectations at different times during their studies).

As this work was largely based on what supervisors said they did, there are likely to be differences between espoused theory and theory-in-use (Argyris and Schon, 1974), and employing mixed research methods in future projects would help to clarify this. For example, we could include: observation, recording supervision sessions, reviewing
Table 5 Applying the framework to identifying student needs

documentation, and asking students and supervisors to keep diaries.

Other areas for further study include disciplinary similarities and differences, the relationship between approaches to research supervision and other teaching and learning activities, gender issues and the effect of organisational initiatives on the quality of doctoral supervision.

Limitations to the framework
This framework can be seen as being reductionist, but the straight lines are really for analysis, and it is in the melding of different approaches to doctoral supervision that the supervisor creates a robust repertoire of supervisory skills.

The framework refers to the economic imperative primarily through looking at the functional approach. There are also broader economic issues relating to knowledge transfer and research as an activity for economic and societal wellbeing – these meta-perspectives are best addressed through a combination of perspectives, not just one.

An historical perspective is not explicitly included and for some academics it may be important to explore this. The whole framework is grounded in the language of a western culture, and other cultures may want to re-interpret this.

The blending of approaches is demonstrated in the following diagram (Figure 1) which describes how they may be interrelated in practice. The Venn-type diagram shows the functional approach as the background to all doctoral supervision because awards cannot be made outside an accrediting institution. The other approaches all overlap and can be blended in different ways according to the situation, age and stage of both supervisor and student. There is some evidence from the interviews that over time supervisors move from working in a large relationship circle to giving the functional approach more prominence. Newer supervisors are more concerned about the quality of the relationship, but more experienced supervisors recognise the key stages and milestones that the research process will go through, and emphasise them.

Finally, it is recognised that supervision does not take place in isolation. Organisations (be they universities, research institutes, colleges, graduate schools or departments) can introduce many practices which will also have a significant impact on the doctoral student’s progress. For example, some universities are becoming much more prescriptive about such issues as: who can supervise, the monitoring of student

Table 6 Applying the framework to understanding core beliefs and values
progress, the use of student satisfaction and exit surveys, cohort-based research methods, generic skills training, the opportunities for Graduate Teaching Assistants, and differing workload models. The framework reviewed in this article still places the relationship between the supervisor(s) and the students at the heart of the student’s learning experience.

Conclusion
This article asks whether the fundamental values of being usable, belonging, rigorous reason, autonomy and agape are sufficient for the analysis of supervision, and potentially for the analysis of curricula and the student experience. If this framework proves to be robust, then we can move forward the teaching and learning experience with some confidence. Table 6, previous page, describes these values and aligns them to core beliefs about how people learn.

We are also left with the question of how to test this paradigm further. Longitudinal, multi-method studies could provide us with much more material with which to test the framework in different disciplines, gender partnerships, organisational frameworks and cultures. I would welcome comments on this.

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