LECTURING AND LEARNING: 
A STUDY OF STUDENTS’ EXPERIENCE

THESIS SUBMITTED FOR THE 
Degree of Doctor of Philosophy

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ABSTRACT

The aim of the research described in this thesis was to investigate students' approach to and experience of lectures. I did this by carrying out case studies of three lecture courses.

I found that students' experience of the relevance of lectures varies qualitatively across three levels of experience of relevance: intrinsic, vicarious and extrinsic. My findings suggest that extrinsic experience of relevance is associated, with, and may well be an essential element of, 'surface' level learning. Intrinsic experience, on the other hand, may well be an essential element of 'deep' level learning.

I also suggest that 'good' vicarious experience is most likely to be associated with 'deep' level learning and argue that it is, potentially, a transitional level between intrinsic and extrinsic experience. Vicarious experience is, consequently, of possible major significance in the facilitation of 'deep' level learning.

Finally, I found a number of possible factors that influence students' experience of relevance, in particular, the following three: characteristics of the lecturer, the teaching and learning context and students' background knowledge of the subject.
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CHAPTER ONE

LITERATURE SURVEY
CHAPTER 1 : Literature Survey

1.0 Introduction

A vast amount of literature purports to concern itself with the 'lecture method'. It ranges from informal, almost light-hearted, discussion on the 'art of lecturing' (see, for example, Walton 1972) to highly empirical and 'scientific' research studies (see Centra 1977). A newly arrived serious reviewer is faced with one (at least) over-riding problem when trying to get to grips with this literature, whatever the nature of the writing. What is meant by the 'lecture method'? Authors frequently do not describe what they understand the lecture method to be. Even so, the definition given by Gregory seems to be adequate for most of the literature:

"essentially, it involves a single teacher teaching a group of students, usually numbering 20 or more, mainly, or exclusively, by verbal exposition. In its extreme form communication is one-way, from teacher to student, but today more and more teachers are using hybrid modes. Thus, as an integral part of its structure, a lecture may contain, for instance, audio-visual aids and other means of demonstration, questions from the audience, questions addressed to the audience, brief discussion and testing."

(Gregory 1975.)

That this definition can be said to be adequate is significant. It is symptomatic of the prevailing approach to lecture research. This approach does not tend to focus upon a given lecture situation and all the factors intimately intertwined within it. As a consequence there is very seldom a more specific description than Gregory's. Instead, we would appear to be left with the implicit assumption that lectures are isolated phenomena which happen to students rather than are experienced by them in a given situation.
One aspect of this assumption is that much of the literature is apparently written primarily from a teacher's perspective considering, in particular, the 'function' of lectures as a teaching method. This is true, if neither surprising nor unreasonable, for most of the considerable number of 'how to lecture' texts. Not so reasonably, however, is they tend to ignore any other perspective. Similarly, most of the research into lectures, upon which these texts are usually based, is carried out from the teacher's perspective: the emphasis is upon teaching skills and teaching characteristics associated with 'effective' lecturing. There may well be potential value in taking a teacher's perspective towards lecture research, but it must be equally as important to carry out research directed towards the students' perspective: that is, to try to understand lectures as they are experienced by students within the specific situation that they find themselves.

The only studies that can be truly considered to take the students' perspective are those that seek out student views and opinion in an open and unstructured way. Thus, I believe, that the approach of administering lecture questionnaires, in order to obtain student feedback is, generally speaking, too structured and teacher-biased to be considered as attempts to look at lectures from the students' perspective. Consequently, research that has utilised lecture feedback questionnaires should be considered as belonging to the category of teacher's - perspective research.

I shall discuss (section 1.6 of this chapter) research which try to get close to students' experience. First, however, I shall examine in more detail the literature and research taking primarily the teacher's perspective. This tends to be concerned with five areas
and these provide the basis for a useful framework for reviewing the literature:

The function and use of lectures  
How to lecture  
The evaluation of lectures and lecturing  
Learning from lectures  
Lecturers' views about lecturing

I will only discuss examples of each of these five areas because of the amount of literature to be found in each.

1.1 The Function And Use Of Lectures

Three possible functions for the lecture method described in the Hale Report are frequently repeated in the literature:

1) **Basic teaching** - to give students a framework for reading and guidance on what to read;
2) **Provide information**, or show points of view not available in a suitable form in the literature;
3) **Kindle enthusiasm** and stimulate thought, inspire.  
   (Hale Report 1964.)

Most of the literature accepts that the lecture can be used to good effect to fulfill the first two functions but regards the third as more controversial. As the U.T.M.U. book, 'Improving teaching in higher education' states:

"It must be said that lectures can be a source of great inspiration to students; but this is probably the exception rather than the rule".  
   (U.T.M.U. 1976.)

This is a view apparently supported by several authors (see, for example, Laing 1968, Bligh 1971, Costin 1972 and Rogers 1977).

However, there is as much support for the view that to kindle enthusiasm is an important function of lectures. Reim, for example, comments that a lecturer will rarely say that his aim in lecturing is 'to stimulate interest' or 'to provoke discussion', and adds:
"The purpose of the first Chapter of this book is to plead that these should be the major aims of the lecturer and to suggest means of achieving them."

(Heim 1976.)

Other authors, whilst not stating the case quite as strongly, also see the kindling of enthusiasm as one of the functions of lectures. (See, for example, Powell 1969, Walton op.cit., Gregory op.cit., Brown 1978).

Other uses are also given for the lecture. Gregory offers the following three:

- to encourage a critical attitude;
- to provide an appropriate model of such qualities and attitudes as precision, clarity of thought and expression, authority and humility;
- to summarise the results of group activity (Gregory op.cit.)

The last gets little discussion elsewhere in the literature. The first two, however, &c; they can possibly be equated with Eligh's main objectives of different teaching methods, 'promotion of thought' and 'change of attitude' which, he believes, are not achieved through the use of lectures. (Eligh op. cit). However, McKeachie (who suggests that discussion methods are probably more effective than the lecture in developing concepts and problem skills), admits:

"The results of the experimentation are generally in line with our hypothesis but are certainly not conclusive."

(McKeachie 1978.)

He goes on to comment:

"However, a suggestion, supported by bits of evidence, arises that other methods of teaching may be more effective than lecturing in achieving the higher level cognitive and attitudinal objectives."

In both statements, therefore, there is the suggestion that the question whether lectures can be used to promote thought or change attitudes remains a matter of debate. Thus, of all the possible functions and uses of lectures, there is a consensus around two only, basic teaching and providing information.
This is not surprising, given that lectures are viewed as isolated, definable phenomena. We are, in fact, reminded that they are not this by McKeachie himself when he remarks:

"It seems to us important to remind the reader also, that a college course cannot be divorced from the total college culture .... A method which may be greeted enthusiastically by students in one college may encounter open rebellion in another."

( Ibid ).

The important point here is that lectures are not isolated phenomena. They are part of a whole teaching and learning context, and each lecture situation will have its own character and individuality. In some situations, with some lecturers and some students, lectures may very well stimulate enthusiasm or change attitudes. In others it is just as likely they will not. I do not believe it is possible to say categorically that lectures do or do not achieve certain objectives. It is not that simple. This criticism is one that applies to a significant amount of lecture literature and one which I will refer to again in this survey.

1.2 How To Lecture

Numerous texts and articles have been written around the topic of 'how to lecture' in order to be more effective. These may be of value, but again there is a tendency to treat lectures as if they were isolated phenomena, focussing on such aspects as preparation, structure, organisation and delivery. This discussion often seems to be to the exclusion of an understanding and awareness of the students as people with their own problems, concerns and priorities. The student, in this literature, is given the role of 'patient' who receives lecture treatment, while the lecturer plays the 'doctor' who must aspire to greater skills in administering the treatment.
This is most apparent in those texts that deal primarily with lectures as one-off public occasions. McLeish seems to implicitly suggest that this is when the lecture method is most appropriate when he discusses the virtues of the lecture method but condemns the idea of the lecture system that is 'compulsory daily lectures unleavened by tutorial discussions, seminars, workshops, etc.' (McLeish 1968).

There is, of course, something in what McLeish says, but this does not mean that we can, as some authors appear to do, simply dismiss the lecture system in general, whatever the context, whoever the lecturer.

One of the prime examples of a text which advises on how to lecture for an event seen primarily as a one-off public occasion is the Royal Institution's 'Advice to lecturers'. This book is a compilation of comments and suggestions made by two eminent lecturers, Michael Faraday and Laurence Bragg.

Bragg is quoted as saying:

"A good lecture is a 'tour de force', a good lecturer should be keyed up to a high pitch of nervous tension before it and limp and exhausted after it."

(Bragg 1974.)

'Advice to lecturers' is obviously based on accounts of personal experience and ideas. The same is essentially true for a number of 'how-to' texts. (For example Heim op.cit and Walton op.cit.) Others draw much more on empirical studies and psychological principles (see Powell op.cit and Bligh op.cit.) Few, however, direct their focus far from the preparation, structure, organisation and delivery of lectures. Sound advice and guidelines are given on how to set about the task of preparing a lecture according to different ideas of how the material might be structured. Bligh, for example, provides a
comprehensive list with descriptions of alternative ways of structuring material. Having organised the material the lecturer is then advised on the most effective way of 'unloading it' on to the unsuspecting students. The emphasis given by most authors is well represented by Heim's summary of the obvious requisites of lecturing. These are:

- Audibility
- Unavailability (i.e. of material)
- Intelligibility
- Order of subject matter
- Pitching of level of difficulty
- Rate of presentation
- Amount of material

(Heim op. cit.)

I am not suggesting such advice is not relevant. But it is rarely considered alongside students' actual experience. Surprisingly little is said, for instance, about the relationship the lecturer has with the students above the level of something like maintaining eye contact. Thus, according to the U.T.M.U. book it is:

"Essential to make frequent glances around the audience, allowing one's eye to rest briefly on individual students."

(U.T.M.U. op. cit.)

The refusal to go beyond this level ignores Rosenshine's finding that the characteristics particularly valued by students are interest and enthusiasm, warmth and systematic, business-like behaviour (Rosenshine 1971).

McKeachie takes more account of the lecturer-student relationship when he comments:

"two characteristic's seem to be especially appreciated by the student (1) objectivity, the student will call it 'fairness', (2) a sympathetic attitude towards the problems of the student."

He goes on to advise that:
"the simplest way of getting the latter of these notions across is to let the students know that you are willing to meet and advise students."

(McKeachie op.cit.)

So there is here the implication that ever and above how a lecturer prepares, structures and delivers a lecture, he should take note of other factors, such as his attitude towards the students and how they perceive him.

Brown, by the way he structures his book, does allow his readers (lecturers) an opportunity to experience for themselves, as a learner, the lecture situation. He does this by alternating text with practical exercises and tasks for lecturers to carry out in learning groups. As he comments at the end of one of his 'units':

"You should have learnt many of the more central skills of lecturing and small-group teaching and have re-experienced the problems of listening, understanding and note-taking."

(Brown op.cit.)

Thus, by doing the exercises, the lecturers not only try to improve their lecturing skills but also are themselves put in the position of the student. They get the opportunity to appreciate a little better how it feels to be in the student role again.

Posenshine's characteristic of Enthusiasm is frequently alluded to in the literature. Bligh, for example, mentions the role of the lecturer's enthusiasm in his discussion on the motivation of students. That enthusiasm is commonly accepted as important is reflected in its frequent inclusion in lecture feedback questionnaires. Walton's explanation of the reason for its importance is as good as any:

"A subject which bores you is unlikely to excite your audience"

(Walton op. cit.)

Walton is implicitly referring to the students' experience of the lecture and the influence of the lecturer's enthusiasm upon that.
In view of the explicit and implicit recognition of the importance of the lecturer's enthusiasm, particularly with respect to its possible influence on the students' experience, it is again somewhat surprising there is little discussion in 'how to lecture' texts on the conveyance of one's enthusiasm.

Bligh, comments:

"We may conclude that some acting ability may be advantageous to a lecturer who wishes to enthuse his audience."

(Bligh op. cit).

and seems, thereby, to devalue any natural enthusiasm a lecturer may already have for his subject. He certainly doesn't say anything which might help the lecturer to recognise how he might better convey any such natural enthusiasm to his audience.

Brown is one of the few authors to include a section on conveying interest and enthusiasm, and to discuss how a lecturer may successfully convey such characteristics.

"Most of us, even the dullest", he says, "can improve" (Brown op.cit.)

Generally, however, the literature gives little advice to lecturers which really takes account of the students' experience of the lecture and the lecturer's influence on it.

1.3 The Evaluation Of Lectures And Lecturers

A large proportion of the research literature upon lecturing is concerned with evaluation, the aim of which is often to identify the characteristics and skills of the 'effective' lecturer. The approach most frequently adopted is to develop and administer teaching rating forms (TRF's) or, as they are more frequently referred to in this country, feedback questionnaires. At the same time, there are at
least as many studies examining the usefulness, reliability and validity of TRF's and highlighting potential drawbacks.

The remaining literature on evaluation is concerned primarily with the effectiveness of the lecture method as opposed to other teaching methods. Many of the views about the function of lectures described in section 1.1 profess to be based on this kind of research. But, as I have explained, the results of research comparing the lecture with other teaching methods tend to be both contradictory and inconclusive.

In this section I shall examine in detail the literature on a) the identification of lecturing skills and b) the validity and usefulness of feedback questionnaires.

a) The Identification of 'effective' lecturing skills

Much of the skills research follows a similar format. In the first instance, a questionnaire, containing generally 20 to 60 questions, describing various lecturer characteristics and skills, is developed. The questions are usually generated from two main sources - past research; and students and lecturers themselves, who are asked about the characteristics they believe important for the 'effective' lecturer.

Once the questionnaire has been developed, the next step is to ask as many students as possible to complete it. The responses are then analysed to see which characteristics they consider the most important. Among others, Cooper & Foy(1967) and Miron and Segal (1976) take this approach. Other studies carry out a more sophisticated analysis of student responses, the latter being inter-correlated and factor analysed to isolate the most important factors. (For example, Smithers 1970, Wimberley and Faulkner 1978, and Isaacson et al 1964.)
Such studies tend to throw up similar factors. Cohen, Trent and Rose list five frequently identified factors as:

1. Clarity of organisation, interpretation and explanation.
2. Encouragement of class discussion and the presentation of diverse points of view.
3. Stimulation of students' interests, motivation and thinking.
4. Manifestation of attentiveness to and interest in students.
5. Manifestations of enthusiasm

(Cohen, Trent & Rose 1973.)

These characteristics are similar to those identified in studies taking slightly different approaches. For example, Hildebrand asked students to rate their 'best' and 'worst' teachers they had had in the previous year. His aim was, thus, to identify not the characteristics associated with the students' 'ideal' lecturer but those which discriminated between 'best' and 'worst', (as perceived by students and other lecturers).

Having identified the questionnaire items associated with effective performance, he then factor-analysed the responses and derived five distinct clusters. These do not differ significantly from those described by Cohen Trent and Rose. They are:

- Analytic/synthetic approach - or command of the subject
- Organisation/clarity
- Instructor - group instruction or rapport
- Instructor - student interaction
- Dynamism/Enthusiasm

(Eildebrand 1973.)

Swain takes a slightly different line, using semantic differential because of his belief that "good teaching is not a simple concept and so instruments for its measurement must be constructed with considerable care". He explains semantic differential in the following way:
"the technique involves the use of a series of bipolar adjectives scales, with seven steps between them, on which the respondents are asked to rate specified stimuli that is lectures and course."

(Swain 1977.)

(Other studies using the semantic differential appear in the literature, for example, Sherman and Backburn 1975.)

In developing his semantic differential Swain first asked subjects to supply adjectives which were descriptive of the relevant stimuli, that is lecturers. He then asked a second group to supply antonyms to these adjectives. In both cases he only kept those adjectives and antonyms where there was a high degree of agreement. Like Hildebrand, Swain elicited adjectives that were supposedly descriptive of students' (and staff's) best and worst lecturers and courses.

Once he had developed the bipolar scales from the adjectives, Swain gave these, plus some standard semantic differential scales, to 21 classes. A principal component analysis of the response yielded 11 distinct and stable factors or clusters of scales and from these he identified eight lecturer and five course factors. He then examined whether these could discriminate between 'good' and 'bad' lecturers, and courses.

He found the following 5 dimensions were good discriminators:

Interest - inspiring and interesting.
Verbal clarity - audible, distinct, articulate.
Organisation and efficiency - prepared, organised.
Inter-personal warmth - warm, considerate.
Practicality - practical, concrete.

(Swain 1977.)

Swain's dimensions, with the exception of Practicality, are again fairly consistent with other studies.
Despite the consistency of identified factors in such studies a number of problems have been perceived with the approach. Kelly, for instance, says:

"One thing many of these investigations have in common, however, is that they appear to regard the lecture as a single undifferentiated activity. That is to say, that what is true of one lecture is implied to hold for lectures in general, whereas lecturers themselves may, and do, hold widely differing views concerning the function of lectures. Can all these various functions be accommodated under the single umbrella term of 'lecturing'?"

(Kelly 1976.)

Kelly maintains that it is better to know what actually happens as opposed to what is generally believed to happen. So he believes it is first necessary to know exactly what the lecturer does and then to decide which of these observed lecturing behaviours can be regarded as desirable skills.

In his own study - in which the aim was to identify those aspects of lecturing which might be improved by microteaching techniques - Kelly's approach was to videotape 16 lectures and to analyse the observed lecturer behaviour in terms of content, structure and presentation. According to his analysis the content of the lectures consisted mostly of exposition as opposed to interaction. The least occurring structure elements were those of summarisation and discussion, whilst his remaining categories of 'orientation', 'instruction', 'demonstration', and 'consolidation' all appeared frequently.

From his analysis of presentation, Kelly developed a list of lecturing skills. It is reminiscent of the Handers type classroom observation schedules, including behaviours such as positive and negative reinforcement, stimulus variation etc. Most of the 'skills' are thus described in mechanistic, behavioural terms, which is necessary if he is to fulfil his aim of helping train lecturers through micro-teaching techniques. But it does mean that his list should not be
regarded as a comprehensive description of effective lecturing. It is based solely on observational data of 16 lectures and does not include the students' experience or response to the lectures. Kelly may work on what actually happens but he does this from only one perspective.

Elliot has made one attempt to develop questionnaire items based on students' perceptions of their lecturers. Elliot believed that many lecturer rating scales were too biased by lecturers' preconceptions. Consequently, he used the Repertory Grid technique as a way of getting students to generate their own scales. He asked each student to list 9 lecturers who had taught them that year. The student was then asked to consider 3 of the lecturers at any one-time and to think of a bipolar scale such that two lecturers could be placed at one end and the third at the other end. In this way Elliot generated 12 scales from each student.

A content analysis of these scales revealed 10 variables which were frequently used to describe the lecturers. Elliot then used these variables to develop an evaluation form, which he believed could discriminate between lecturers. Elliot's 10 variables are not dissimilar to those factors that have already been described. They are:

- Overall impression of courses
- General interest
- Practical use
- Lecturer's organisation of content
- Presentation
- Clarity of expression
- Organisation of time
- Choice of examples
- Attitude to students
- General manner

(Elliot 1969.)
All the studies I have discussed are primarily concerned with the identification of effective lecturing skills. In most studies the aim is to use these to develop feedback questionnaires which the lecturer can then use to improve his own lecturing skills. As Marcel Goldschmid has remarked:

"the evaluation data should above all else serve the professor as valuable feedback on his performance as a classroom teacher."

(Goldschmid 1976.)

The question as to whether TRF's do in reality achieve this has itself been the centre of much research, along with the question of their validity.

b) The Validity and Usefulness of Feedback Questionnaires

Most validity studies correlate student achievement in the classroom with lecturer ratings on a particular TRF, thus identifying if there is a relationship between good grades and good ratings. Usefulness is considered both in the same terms, and in those of apparent improvement as a result of using TRF's.

A paper by McKeachie Lin and Mann represents very well many of the studies into validity. Having said that "The ultimate criterion of good teaching is student learning", they go on to analyse the data from five studies correlating achievement with ratings (on skill, workload (or difficulty), structure, feedback, group interaction and student teacher rapport). But they are unable to discover any relationship. They, therefore, conclude:

"These, plus other data, indicate that teacher effectiveness is not a unitary concept but one involving a number of complex interactions. When we ask, "which teachers are most effective?" we need to add further- "For which objectives?" and "for which students?" With such additional specifications student evaluation may provide evidence of teacher effectiveness."

(McKeachie et. al. 1971.)
The results of other studies support this view. They, like McKeachie et. al, find positive correlations within individual studies but there is no across-the-board correlation. No consistent picture emerges between the studies. (See for example, Brown 1976, Centra 1977, Frey 1973, Gessner 1973, Hoffman 1978, Solomon, Rosenberg and Bezdek 1964 and Sullivan and Skanes 1974).

Further studies have demonstrated that there are numerous, different factors affecting the ratings students give their lecturers. These factors include anonymity of the rater (see, for example, Stone et. al. 1971, Abrami et. al 1976); grade expectation (for example, Synder and Clair 1976); and timing of the T.R.F. completion (for example, Kohlan 1973). It has also been demonstrated that lecturer 'charisma' has a significant influence and can be consciously projected or manipulated to foster high ratings, irrespective of whether students still achieve well or not. (See, for example, the 'Dr. Fox' studies; Naftulin, Ware and Donnelly 1973; and Ware and Williams 1975. Also Coats, Swierengal, Wickert, 1972 and Shermain 1976).

In a not dissimilar study to the 'Dr. Fox' studies, Zelby (Zelby 1974) found that lecturing techniques could be consciously manipulated for the same reasons. A particularly worrying aspect about Zelby's study was that students gave high evaluations to lectures aimed at the level of 'Information, storage and retrieval'. Lectures aimed at the 'development of an ability to learn independently and cope with novel situations' received the lowest evaluations.

Further 'Dr. Fox' studies demonstrate that an incentive to learn (arising from money rewards) and the amount of content included in the lecture were more important influences upon achievement than any amount of 'expressiveness' demonstrated by the lecturers (Williams and Ware 1976).
The important implication of these studies is that more factors than 'lecturing skills' influence students and what they learn. And they are a further indication that we should take more account of students themselves and their experiences, preoccupations and concerns.

If we are to conclude that student achievement is not a very good validation of T.R.F.'s, the question still remains of how useful lecturers find them. Goldschmid says that "the evaluation data should above all else serve the professor as valuable feedback on his performance as a classroom teacher" (Goldschmid op. cit.) Is this borne out in practice?

A survey of physical science teachers indicates lecturers do have doubts about their usefulness (Simpson 1966). Other Studies, too - for example Centra 1973, Miller 1971 and Foy 1969 - all found that the showing of ratings results to lecturers had little effect on latter ratings. One clue as to why this should be the case appears in Centra's study. He found that lecturers did apparently improve their ratings but only if they were given normative data against which to compare their ratings. Centra concluded that the lecturer needs something in addition to straight questionnaire results to assist him to interpret his results. This conclusion is supported by later studies by Pambookian (1977), Marsh et. al. (1975), McKeachie et. al. (1980) and Aleamoni (1978). However, notwithstanding such normative data there are other difficulties Schultz, for example, comments:

"The information the TRF does provide is neither diagnostic nor prescriptive. It is one thing to tell a teacher that students don't think he is well prepared. It is another thing to tell a teacher who has been diligently preparing what to do when he is rated unprepared. It is one thing to rate an instructor's explanations as unclear. It is another thing to tell a teacher who has been struggling for clarity what to do when he is rated unclear. These important questions which must be answered if teachers are to improve are neither asked nor answered by TRF's".

(Schultz 1977.)
Similarly, Pambookian, discussing the giving of feedback to instructors, explains:

"In my study at Michigan, the instructors expressed satisfaction on receiving feedback but, apparently, did not know how to use it. They asked me to specifically tell them what to do and how to develop appropriate skills or teaching styles."

(Pambookian op. cit.)

There are further problems with TRF's. One major one is the vagueness of the terms. This is well pinpointed by Rosenshine:

"... the variable labelled 'clarity' is rather vague and we do not know the specific behaviours which comprise high ratings on clarity."

(Rosenshine op. cit.)

Yet, even if we were able to identify the specific behaviours which comprise high ratings for different teaching skills, there still remain doubts about the process by which such skills are identified. Many of the identified skills are based on 'ideals' rather than what lecturers do in reality. Even when they are based on the differences between 'best' and 'worst' lecturers Levinthal's research shows there is still likely to be an 'ideal' effect in the completion of the relevant scales. He found that items which were believed to be highly desirable were frequently the ones observed. He concluded that an implication of this was that:

"interpretation of numerical scale values obtained from scales of this type are problematic without independent knowledge of the ideal points of observers rating teaching performance."

(Levinthal et. al. 1971.)

As Johnson, Rhodes and Rummery point out in their critical review of existing evaluation instruments:

"Consistency of response can be attributed just as legitimately to a collective student mythology of teaching as to any rigorously conceived model of teacher behaviour."

(Johnson, Rhodes and Rummery 1975.)
There does seem to be legitimate doubts about the value of TRF feedback to lecturers particularly when there is no additional support. A considerable effort has been put into its development yet this seems disproportionate to the effort put into other approaches of looking at the lecture situation.

1.4 Learning From Lectures

At the top of his list of how a lecturer may improve himself, Laing puts, "Deepening one's knowledge of the psychology of learning" (Laing op. cit.)

And, in fact, there are several discussions in the literature on how students learn from lectures, and a number of the 'advice to lecturers' texts profess to base their ideas upon particular learning principles and theories.

Thus the U.T.M.U. book 'Improving Teaching in Higher Education' claims to base its advice upon the three main learning principles of motivation, reward and practice. (UTMU op. cit.) In a similar way, Bligh discusses the psychological limitations of the student when the primary objective of the learning situation is the acquisition of knowledge. (Bligh believes that this is the objective for which the lecture can be considered a suitable method).

I do not wish to discuss Bligh's psychological limitations in detail but it is interesting to note some of their underlying principles and their similarity to the 3 UTMU learning principles.

For instance, Bligh maintains that one of the functions of note-taking in lectures is "to arrest the decay of memory by rehearsal of what is written." He presumably believes that some kind of rehearsal of the material is essentially for learning to occur. The principle
underlying Bligh's rehearsal factor is basically the same as the UTMU 'practice' principle. Similarly, Bligh lists repetition as another important factor in the consolidation of learning. This also relates closely to the 'practice' principle. (The same factor is implicit in Heim's advice to lecturers - Heim op. cit.)

Both the UTMU book and Bligh stress feedback, though they, as the literature as a whole, regards the lecture as a situation where the opportunity for feedback is little. The UTMU book believes feedback is an important aspect of 'practice'. Bligh sees feedback in terms of reward or punishment (reward being another of the UTMU principles).

Both the reward and punishment types of feedback, according to Bligh, have benefits. Bligh's discussion on students' need for social interaction closely relates to the discussion on 'reward' in the UTMU book.

The UTMU's third principle of 'motivation' is regarded as important in many of the 'how to lecture' texts, which direct much of their advice towards it. Both the UTMU book and Bligh link relevance to motivation, suggesting that a possible way to 'motivate' students is by making the material more relevant to them. Enthusiasm from the lecturer is also regarded as important to motivation.

In a different vein, Powell's 'advice to lecturers' is based upon a behaviourist, conditioning, view of learning. He describes 'conditioning' as:

"The process of learning to recognise, associate and discriminate as a consequence of 'operating' on the environment, of rejecting what does not reduce discomfort and repeating what brings satisfaction, is regarded as the basic building process of learning."

(Powell, 1969.)
Powell sees learning as the development of more and more adaptations to the environment by a process of internalisation of experiences, which are organised into a so called schema. More complex or 'schematic behaviour' results from the integration of specific responses into complex activity. Powell sees such a view of learning as having a wide application and development. In this, his overriding principle is that of conditioning by reward and punishment.

In contrast, Brown's ideas about learning from lectures, are based upon human - information - processing studies, such as those of Lindsay and Norman (1972.) He summarises his ideas about the processes of learning from lectures in the following schema:

Fig. 1 G.Brown's schema for Learning from Lectures

(In Brown 1978).

From the principles of learning on which this schema is based Brown derives a list of basic lecturing skills (although he does not suggest it is definitive). An examination of Brown's list reveals that many of the skills also relate to the UTMU learning principles. Brown's list reads:
1) Explaining: giving understanding, using examples and illustrations (N.B. motivation principle).

2) Orientation: opening a lecture, introducing a topic or theme.

3) Closure: summarising themes and linking topics and themes (N.B. practice principle).

4) Liveliness: generating interest and enthusiasm, giving and holding attention (N.B. motivation principle).

5) Using audio-visual aids: the effective use of blackboards, overhead projectors, slides and models.

6) Varying student activities:

7) Giving directions: indicating how to carry out procedures or how to solve various types of problems.

8) Comparing: comparing and contrasting, giving similarities and differences or advantages and disadvantages, or various methods, approaches and perspectives.

9) Narrating: reading from a novel, play, poem or a text to illustrate or exemplify a point of view.

The work of the writers I have discussed differ, to varying degrees, in their underlying assumptions and principles, but each represents an attempt to apply a particular theory about learning to the lecture situation. At the same time, there seems to have been little attempt to look at the learning process in the lecture situation itself.

It is often said that practising teachers don't always find the theoretical ideas and concepts about learning of much relevance or use to their day-to-day task of teaching. The reason often put forward is that the empirical laboratory experiments on which many learning theories are based are simply too divorced from the reality of the classroom to be very meaningful. It may, therefore, be worthwhile to attempt to look at students' learning processes in the actual lecture situation and thereby gain a better understanding of learning from lectures. The work of Ference Marton of Gothenburg is in such a vein, looking at the learning process as experienced by students, though on their learning from texts. I will discuss his work in detail in the next Chapter and suggest how his approach might be applied to the lecture.
I mentioned earlier Bligh's views about the function of note-taking in lectures, and it seems appropriate at this point to refer to the quite extensive amount of research in this area (see, for example, Howe 1974, Carter and Van Matre 1975, Davies 1976 and Hartley 1976.)

One may apply to this research the above comments on the dominance of empirical laboratory experiments over natural situation approaches. As Hartley and Davies conclude at the end of their review of this research:

"In our analysis of why students take notes we have distinguished between the process of notetaking and its resultant product. This distinction has been studied in the research literature but natural notetaking situations have largely been ignored. Furthermore the amount of information communicated and remembered has been the only criterion of success. It is perhaps not surprising, therefore, that the research literature on notetaking does not have a great deal to offer in terms of practical utility for teachers and learners."

(Hartley and Davies, 1978.)

(This view is further reinforced by Elton and Lau 1979 in their discussion of approaches to educational research and the relationships between education researchers and practising teachers.)

Hartley and Davies stress three inadequacies of many notetaking studies:

1) The problem of individual differences;
2) The institutional requirements of learning situations;
3) What students do with their notes once they have taken them.

Each of these - in particular, the second - has relevance to the general spectrum of research into lectures, institutional requirement, or demands, being seldom considered alongside studies of 'the lecture method'.

1.5 Lecturer's Views About Lecturing

Given that most of the literature on lecturing is written from a teacher's perspective, it is surprising that only relatively few studies actually ask lecturers themselves about the experience. Admittedly, some of the previous texts I have mentioned are based as much upon the author's own experience of lecturing as anything else, (for example Walton op. cit, and Laing op. cit). There have, nonetheless, been few attempts to go out and obtain the views of other lecturers beyond eliciting feedback questionnaire items.

A number of studies have shown that lecturing, or the thought of lecturing, frequently causes anxiety, in particular, to inexperienced lecturers. (See, for example, King 1973, and Sunderland 1974), and Walton depicts some of these 'anxiety' feelings most vividly in his book (Walton op. cit). But beyond these allusions the literature mentions little more about the experience of lecturing. Throughout this review I have emphasised the need to look at students' experience of lectures. But, of course, the lecturer himself is just as intimately involved in the lecture situation and to ignore his or her experience would seem as serious an omission.

I referred earlier (in section 1.2) to the Royal Institute book 'Advice to Lecturers'. In this book the Institute quote the ideas of the two eminent scientists, Michael Faraday and Laurence Bragg, both renowned for their lecturing abilities. In this way the Institute provide readers with the opportunity to adapt these ideas to their own lecturing situations. If this works it is a valuable contribution. In his book, 'Teaching in the Universities, No One Way' Sheffield takes a similar, but more systematic approach. He identified 23 Canadian lecturers considered to be excellent teachers by a sample of their previous students.
He then invited each of the 23 to write an essay, each being told: "What is wanted is a personal expression of what you believe about teaching undergraduates and how you go about it." (Sheffield 1974).

Sheffield includes all 23 essays in his book and at the end attempts to summarise areas of agreement between the lecturers, and between the comments of their former students about the good teaching they had experienced.

Sheffield's first comment is:

"One of the points on which the essay writers are generally agreed is that the teacher's most important role is to stimulate students to become active learners in their own right."

This is interesting in the light of earlier discussion (in section 1.1) about whether or not the stimulation of students should be considered one of the functions of lectures. It is particularly interesting when one considers that "almost without exception the professor - essayists use the lecture as the chief vehicle of their teaching."

Much along the same lines Sheffield goes on to say:

"As a group they are firmly of the opinion that the presence of the teacher in the classroom, communicating and interacting with the students, is essential to the educational experience."

Other areas of agreement among the lecturers include the belief that there is no one way to teach; the general acceptance that students are important, or are liked, respected or cared for; enthusiasm and love for their subjects; and, lastly, stress upon the importance of preparation and also the conveyance of general ideas rather than details.

Sheffield also asked the students to:

"describe the characteristics, qualities, methods, procedures, etc., which in your view identify each of these as an excellent teacher."

Here Sheffield does not stray very far from the studies, described earlier, which ask students to describe their 'best' and 'worst' lecturers (e.g. Hildebrand op.cit.) Sheffield isolates ten characteristics from
their descriptions and these do not, indeed, differ sharply from those in other studies. And yet they do not contradict the ideas he extracts from the 23 essays. They are:

1) Mastery of subject, competent
2) Lectures well prepared, orderly
3) Subject related to life, practical
4) Students' questions and opinions encouraged
5) Enthusiastic about their subject
6) Approachable and friendly, available
7) Concerned for students progress, etc.
8) Had a sense of humour
9) Warm, kind and sympathetic
10) Teaching aids used effectively

One of Sheffield's most telling conclusions, based on his examination of both the essays and students descriptions, is the following:

"Attitudes towards students and teaching are more important than methods and technique."

He goes on to say:

"little is known about how attitudes are formed, less about how they may be changed."

I suggest that one way in which attitudes may be changed is to create in lectures a greater understanding and awareness of the lecture situation as experienced by students. It is for this reason that I believe it is important to research the students' perspective of lectures.

A few studies do take more of a student perspective, exploring students' experience. Whilst none of these are specifically upon students' experience of lectures, they do include lectures as part of their investigations into student experience. I shall describe these in the next section.
1.6 The Students' Perspective

A study by Peter Marris, called 'The Experience of Higher Education' is based on 'discursive interviews in which students were encouraged to talk freely.' Its aim is concerned:

"with the experience of education as it appears to the student who goes through it."

(Marris 1964)

Marris interviewed students on a wide range of topics. One question he asked students was what they wanted from lectures and what in their experience distinguished good lectures from bad. Thus, like Sheffield, he used an approach which depends ultimately upon students' perceptions of the 'ideal' lecturer as well as possibly, as Johnson et. al (1975) comment, upon 'a collective student mythology of teaching.' Despite this, Marris elicited comments from his students which add to the belief that students

"respond to a total package, to speakers as well as to what they speak, to the medium as well as to the message."

He summarises his lecturing data thus:

"In summary, students put a high premium on the personal impact of their lecturers - their presence, way of projecting themselves, way in which they spoke about their subject, the intellectual pleasure they experienced and displayed. Attitudes to a cause were also mixed up with students' personal responses to the figure who simultaneously served as mentor, guide and communicator."

A more recent study is that of Parlett, Simons, Simmonds and Newton, 'Learning from learners'. Similar to Marris they say. The purpose of their study was

"to examine and discuss the experience of academic life more directly from the points of view of its principal consumers, undergraduate students."

(Parlett et. al. 1977).
Again, as Marris in his approach, they tried:

"Especially at the beginning, to let students talk freely about their courses, the way they were taught, the way they learned, the staff they knew, the problems they encountered, and the hopes and disappointments they privately harboured."

In their interviews Parlett et. al apparently adopted an approach which was deliberately informal and relatively unstructured. Although their intention was to look at Universities as a whole experience they inevitably collected many comments about lectures. These were mostly made in response to the question; 'What are the hallmarks of good teaching?' This, of course, still does not avoid the likelihood of responses based on students mythology or 'ideals'. That aside, they too found a major differentiation between teachers who were 'interesting and enthusiastic' or alternatively 'boring and lifeless.'

Their summary of students' experience of lectures is reminiscent of that of Marris and puts emphasis upon the attitudes towards students and teaching which Sheffield talks about.

"the important point was that teachers should demonstrate their commitment and their "interest in communicating the subject" students want to be stimulated and enlivened by lectures."

(Ibid)

A study by Bliss and Ogborn, upon 'Students Reactions to Undergraduate Science', takes a somewhat different approach. They asked students to tell them 'good' and 'bad' stories about learning. As they comment:

"Lectures form a great part of the normal work of science students, indeed it is no accident that nearly half of all the stories were about them. This makes it particularly important to understand a little better what makes a good, and what makes a bad, lecture experience."

(Bliss and Ogborn 1977).

Thus Bliss and Ogborn are no longer asking students what is the difference between a 'good' and a 'bad' lecturer but between a 'good' and a 'bad' experience. From the student stories of experiences they attempt to identify some of the associated feelings. They found
in several stories:

"a strong element of reacting well to the personal human qualities of the teacher as well as his teaching ability as such."

In good lecture stories typical feelings were interest and increased involvement in the subject: lack of involvement was apparently the most common feeling in 'bad' stories. Indeed, Bliss and Ogborn comment that:

"Running like a thread through both 'good' and 'bad' lecture stories are both involvement and understanding. Essentially all 'good' stories mention interest, enthusiasm, and so on, if they mention nothing else. Essentially all 'bad' stories mention their gloomy opposites. Again, both kinds stress understanding or not understanding as the single most frequent reason for feeling 'good' or 'bad'.

Bliss and Ogborn also examine the reasons students give for their experiences being either 'good' or 'bad' ones. They conclude that:

"in 'good' stories, reasons to do with the emotional aspect of the teacher-student relationship are more prominent than in 'bad' stories, where the emphasis is heavily on ideas. It shows also how in 'good' stories, reasons to do with human interaction come more to the fore."

Thus, in common with the other two studies, Bliss and Ogborn emphasise the teacher - student relationship. In all three studies, as in Sheffield's study, there is a distinct move away from discussing lecturing methods and techniques towards discussing the teacher - student relationship and students' perceptions of the teacher. Yet the importance of these kind of issues to discussions about the lecture method would probably never be really recognized from those studies that take the teacher's perspective. There may well be other factors which can only be identified by examining the students' perspective.

None of the last three studies focuses specifically upon the lecture situation: this study does and, more important, does so by examining the lecture situation as it is experienced by students rather than reducing it to a number of isolated phenomenon outside the context of that experience.
CHAPTER TWO

STATEMENT OF THE PROBLEM AND OUTLINE OF THE RESEARCH
CHAPTER 2: Statement of the Problem

Outline of the Research

2.0 Introduction

I explained in Chapter 1 that most of the research in the lecture literature takes a teacher's and not a student's perspective. Consequently lectures cease to be regarded as phenomena that are experienced by students in a specific situation and become isolated elements that happen to them. There is insufficient consideration of what influences students to respond positively, or negatively, to a given lecture situation. Thus many pertinent questions remain unasked. What influences students to perceive their lectures in the way they do? How do such perceptions influence their approach to the lecture material? The research cannot tell us.

The isolation and identification of lecturing skills and characteristics as important for 'effective' lecturing - and presumably therefore learning - breaks down a total integrated experience into parts, and treats them as separate entities without contexts. In contrast, the reality is that they are parts integrated within a given context.

Such research, it is true, is trying to simplify a complex situation. But, as Giorgi points out:

"simple situations may indeed be easier for conducting research but they are often much more difficult to relate meaningfully to the life-world, whereas complex situations may actually be more difficult to research, but if they are researched, then the relevance of the research results for the life-world is relatively straight forward."

(Giorgi 1975.)

'Life-world' is the "every day world we all experience, or some segment of it."

That it has sometimes been difficult to relate the lecturing research to the 'life-world' of lecturers and students was pointed out in Chapter 1.
Giorgi, a phenomenologist argues that:

"one must always begin with the concrete behaviour and experience of the person in a given situation."

(ibid)

Such a phenomenological perspective relates well to my own wish to concentrate upon students' experience of lectures.

My interest was in student learning from lectures. I wanted to explore students' approach to and learning from lectures; what kind of things influenced their approach; and, in particular, the extent and importance of the lecturer's influence. The best way of exploring these and related issues is, I believe, to talk to students themselves about their experience of lectures.

2.1 Student Learning From Lectures

It is important to explain what I understand "student learning from lectures" to be. As I explained in Chapter 1, research on lectures and the efficacy of the lecture method has assumed that such learning can be described in terms of general learning theories. And that it can be quantitatively measured by tests of how much knowledge has been acquired from a given lecture. However, to know which bits of knowledge have been retained gives no indication of the understanding and meaning that the lecture content has for the student. Nor does it give any indication of the learning process (the researchers assuming, anyway, that that can be generalised from learning theories.)

Yet, learning outcomes are supplementary to and consequential on process. The quality of a student's understanding of the lecture content depends on the extent he is able to discover its meaning in his own terms. This, in turn, depends on the approach he takes to the lecture.
Thus I see student learning from lectures as the process whereby students discover for themselves the meaning of what is being said and as the approach they adopt in carrying out that process. This description, together with its inherent emphasis upon qualitative, rather than quantitative, differences between students, is closely linked to Ference Marton's view of student learning (Marton 1975, Marton, Dahlgren, Svens, and Säljö, 1977, and Marton 1978). Marton and his colleagues state that their research interest over the past few years has been:

"in the type of learning which characterises the everyday life of most students, namely the type of learning whose idea is to find out about things through written or spoken language."

(Marton et al 1977)

In their work, which is focused upon learning from the written text, they have paid particular attention to qualitative rather than quantitative differences in outcomes of learning. And they have been able to relate differences in outcomes to differences in process.

Marton believes that students have either a 'deep' or 'surface' orientation to reading a text; that is, in their approach to the task, students either concentrate primarily on what the text is intended to impart or they focus their attention, in a more surface way, on the text itself. Marton describes a 'deep' orientation to the learning task as an active approach to learning where:

"the subjects thus appear to have been actively attempting to connect what they were reading with what had gone before and utilise their own capacity for logical thinking."

(Marton 1975)

He regards a 'surface' orientation as a passive approach to learning where the subjects concentrated:
"on the discourse itself, on subsequent achievement requirements and so on."

He elaborates his description by continuing:

"these subjects were confronting the discourse passively. It was treated as an isolated phenomenon and they touched only its surface (without making any contact with what it was about)."

(ibid.)

One of the main findings of Marton and his colleagues was the close relationship between deep and surface learning approaches and learning results. Those students who were deep orientated were much more likely to appreciate and understand the author's meaning than those with a surface orientation.

Marton relates the students' orientation to their view of the 'reality' of their subject.

Students with a 'deep' orientation

"grasp the fact that the university subjects they are reading have to do with the same reality as that of their daily lives. This means they make use of their knowledge and skills."

In contrast, he says this of the 'surface' orientated:

"many students did not even seem to assume that their subjects had anything to do with reality."

(ibid.)

The main difficulty for the student, according to Marton, is grasping what is behind the written or spoken discourse that is, if he is to change his 'conception of reality' which, is ultimately what Marton believes learning to be (Marton 1978). In order to do this it is presumably necessary for the individual to experience what he reads as relevant. However, as Marton himself points out in his earlier paper:

"We cannot even take it for granted that the individual assumes there is something behind the written or spoken word."

(Marton 1975.)
Marton's ideas about student learning, together with a small pilot study of my own, had an important influence upon the rest of my research and my thinking. I shall now briefly describe this study and then relate the results to Marton's views.

2.2 Description and Results of Pilot Study

2.2.1 Introduction

The pilot study was of a group of students who had just completed a lecture course on Social Research Methods. It was one of three lecture course into which I was to carry out an in-depth investigation the following academic year.

The Social Research Methods course comprised of 1 lecture and 1 tutorial class per week over two terms. It was given by a lecturer from the Sociology department to students from two different departments. There were second year Human Science students, and Second and Final (Fourth) year Home Economics students. The final year Home Economics students were taking the course after a year in industry: the second-years were taking it because the department had decided that from that year the course would be given before the industrial experience.

The tutorial classes were led by the course lecturer and another staff member. Whether or not students had the lecturer as their tutor was an important factor. Thus it makes sense to divide the students into four groups according to department and whether they were lecturer tutored.

The four groups were as follows:

12 Home Economics 2nd year, non-lecturer tutored - Ho.EconII NLT
11 Home Economics 2nd year, lecturer tutored - Ho.EconII LT
15 Home Economics final year, lecturer tutored - Ho. Econ IV, LT
22 Human Science 2nd year, non-lecturer tutored - Hu.Sci.II NLT
The main source of data in the study was an end-of-course questionnaire which the lecturer circulated to all students (see Appendix A). There were also interviews with several students and discussions with the lecturer. The questionnaire covered a wide area: lectures, tutorial classes, handouts, coursework and course-assessment. It included basically open questions on these areas, and also three sets of rating scales, dealing with the content, the lecturer and the tutors. Table 2.1 gives the mean responses obtained for the lecturer scales, the most relevant to the present research.

In the interviews, I spoke to five students: three Human Science, one final year Home Economics; lecturer tutored, and one second year, lecturer-tutored, Home Economics student. These interviews, plus the discussions with the lecturer, gave more meaning to the questionnaire results. I will now discuss these.

2.1.2. Questionnaire Results

The response rate of the questionnaire was as follows:

- Ho. Econ II NLT 25% 3 (of 12) students
- Ho. Econ II LT 55% 6 (of 11) students
- Ho. Econ IV LT 85% 13 (of 15) students
- Hu. Sci. II NLT 45% 10 (of 22) students

The response rate was quite significant and in accord with other data obtained: But any further inferences must be tentative with such a low response rate.

a) Home Economics II NLT (non-lecturer tutored)

This is the most difficult group to discuss since that was a very low response rate to the questionnaire (25%) and no-one from the group was interviewed.

The views of those who did respond are reflected well in Table 2.1. They had a low opinion of the lectures, the lecturer and also the classes
Table 2.1

Table of mean lecturer - scale items rating for each research methods group of students
(1 - 5 Scale, 1 is Low, 5 High or Positive).

<table>
<thead>
<tr>
<th>Item</th>
<th>HE II NLT (25%)</th>
<th>HE II LT (55%)</th>
<th>HE IV LT (85%)</th>
<th>HS II NLT (45%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Organisation of course</td>
<td>3.7</td>
<td>4.0</td>
<td>4.6</td>
<td>4.1</td>
</tr>
<tr>
<td>2. Interest in subject</td>
<td>2.3</td>
<td>3.8</td>
<td>4.2</td>
<td>3.8</td>
</tr>
<tr>
<td>3. Presentation of subject matter</td>
<td>1.3</td>
<td>2.2</td>
<td>4.3</td>
<td>3.9</td>
</tr>
<tr>
<td>4. Skill in guiding the learning process</td>
<td>3.3</td>
<td>4.3</td>
<td>4.3</td>
<td>3.1</td>
</tr>
<tr>
<td>5. Course work</td>
<td>1.7</td>
<td>4.6</td>
<td>4.0</td>
<td>2.4</td>
</tr>
<tr>
<td>6. Willingness to Help</td>
<td>2.7</td>
<td>4.6</td>
<td>4.4</td>
<td>4.3</td>
</tr>
<tr>
<td>7. Course Materials</td>
<td>4.7</td>
<td>4.3</td>
<td>4.7</td>
<td>4.3</td>
</tr>
<tr>
<td>8. Contribution to Intellectual Development</td>
<td>3.3</td>
<td>4.0</td>
<td>4.4</td>
<td>3.8</td>
</tr>
<tr>
<td>9. General estimate of Course</td>
<td>2.0</td>
<td>3.2</td>
<td>4.4</td>
<td>3.8</td>
</tr>
<tr>
<td>10. General estimate of Lecturer</td>
<td>3.0</td>
<td>3.8</td>
<td>4.8</td>
<td>4.3</td>
</tr>
</tbody>
</table>
and they seemed uncertain about the relevance of the course to them. The only part of the course they made favourable comments about were the handouts and the exercises (see question 7, table 2.1) which were, it seemed, the essence of the course for them. It is impossible to say how far one can safely generalise from these students to the other Ho. Econ. II NLT students. If the lowness of this group's response rate is any indication of negative feelings towards the course it can possibly be assumed that the remaining students felt much the same way. There is support for making such an assumption from the overal correlation between response rate and student feelings: the higher the rate the more the students were favourably inclined to the course.

b) Home Economics II LT (Lecturer tutored)

These students, like the previous group, were second year Home Economics students but they had the course lecturer as their tutor. For this group the questionnaire data (for six of 11 students) is supported by one interview.

Table 2.1 suggests that these students had a more positive perception of the lecturer than their non-lecturer tutored colleagues. They felt the classes were the most important aspect of the course and were critical of the lectures, often finding them difficult. The one student interviewed accredited some of her difficulties to her lack of background knowledge of social science concepts and vocabulary, her and her colleagues overall course being to date, for the most part, engineering and science subjects. The estimate of the research method course by these students was not high but they did feel it to be, at least potentially, relevant to them.

c) Home Economics LT (Lecturer tutored)

This group comprised all the Final (Fourth) year Home Economics students: in other words, all final year students were lecturer tutored.
Again the questionnaire data (13 of 15 replies was the highest response rate) is supported by one interview. These students, according to table 2.1, were the most favourable towards the lecturer, the lectures and the course generally. They felt that the course was a relevant one to them: the interviewed student explained that during her industrial year she had designed questionnaires and this practical experience helped her to see the relevance of research method skills to home-economics.

d) Human Science II NL (non-lecturer tutored)

This group comprised all the Human Science students - a second year course only for them - none of whom had the lecturer as class tutor. The questionnaire data (from 10 of 22 students) is supported by 3 interviews. According to Table 2.1, these students had a fairly high overall estimate of the course and a positive perception of the lecturer. They were, in fact, not highly critical of any aspect of the course, although some would have preferred it to be more comprehensive and sociologically orientated. Presumably it is fair to infer from this that they felt the course to be relevant.

2.1.3 Discussion of Questionnaire Results

Although the human science students did not have the lecturer as a tutor they did come from the same department and, unlike the home-economics students, had other opportunities of contact with her. Also, as second year students in human science, they could reasonably be assumed to have had a fairly strong (if theoretical) background knowledge of sociology and social science concepts. (Their's was theoretical as the final year Home Economic students' was practical). These two characteristics of

1) How well they know or were personally acquainted with the lecturer; and

2) The extent of their background knowledge and familiarity with sociology,
seemed to have an influence upon how the students from the different groups viewed the course. Thus we can look at the four groups in the following way:

**Ho Econ IV LT**: They had the lecturer as their class tutor and also, as a result of their industrial year experience, had a practical background knowledge and familiarity with the subject. They were, as a group, the most positive towards the course and felt it to be relevant.

**Hu Sci II NLT**: They knew the lecturer, although not as their class tutor, and had a background in this type of subject. As a group, they were the next most favourable towards the course and could be inferred as seeing it as relevant.

**Ho Econ II LT**: They had the lecturer as their class tutor but, apparently, had little background knowledge or familiarity with the subject. As a group, they were less favourable towards the course and less certain about its relevance.

**Ho Econ II NLT**: They had neither the lecturer as their class-tutor nor a good background knowledge of the subject. They were also the least positive towards the research methods course and most uncertain about its relevance.

### 2.3 Discussion of Pilot Study Results

The fact that the four groups seemed to differ in their views and opinions according to

1. how well they knew the lecturer, and
2. the extent of their background knowledge

points to a number of important issues. One is the inadequacy of obtaining only students' ratings of the lecturer on characteristics such as, 'Interest in subject', 'Presentation of subject matter', and 'Willingness to help' etc.

An examination of table 2.1 shows it provides little useful information. It is possible to see, for example, that the non-lecturer tutored
second year Home Economics rate the lecturer and course lower than other students, but there is no indication of why. Similarly there is no indication why the lecturer tutored second year Home Economics students did not rate the course overall higher when their perception of the lecturer, according to table 2.1, was apparently positive. Nor by table 2.1 alone is it possible to see that personal acquaintance with the lecturer or the extent of background knowledge might influence students' perceptions.

In much of the literature where only rating scales are used the results are not even broken down according to student sub-groups, but calculated as a mean score for the whole class. This approach gives even less information about the difference in students' feelings about courses.

I stated earlier that my interest was in student learning from lectures; that is, 'the process whereby students discover for themselves the meaning of what is being said and the approach they adopt in carrying out that process.' It is conceivable that if students acquaintance with the lecturer and the extent of their background knowledge apparently influence how the students feel about a course they may also influence their learning from lectures and whether or not they take a 'deep' or 'surface' approach in their learning.

A deep approach, it will be recalled, is described by Marton as an active approach to learning where:

"the subjects thus appear to have been actively attempting to connect what they were reading with what had gone before and utilise their own capacity for logical thinking."

(Marton 1975).

On the other hand, a surface approach is a passive one where the subjects concentrate:
"on the discourse itself, on subsequent achievement requirement and
and so on."

(ibid)

As I have already explained, Marton believes that if students are to
take a 'deep' approach to learning they must:

"grasp the fact that the University subjects they are reading have
to do with the same reality of that of their daily lives."

(ibid)

In contrast, if students do not believe the subject has anything to do
with their own reality they are more likely to take a 'surface' approach.

As far as learning from lectures is concerned one could imply from
this that it is important, if 'deep' learning is to occur, that students
recognise what they hear as having something to do with the same reality
as that of their daily lives; or, put another way, they perceive what
they hear as relevant.

It may, however, be very difficult for students to recognise what
is being said as having anything to do with the same reality as that of
their daily lives if they have little background knowledge or familiarity
with the subject. A student with little or no existing knowledge and
understanding who comes across ideas and concepts for the first time may
have no framework in which to take in these ideas. He may, as a consequence,
be forced to confront the material as if it were an isolated phenomenon
with which he is unable to make contact in any 'deep' sense. For some
students the subject may seem so removed from their reality that their
attitude towards it becomes one of extrinsic motivation. In that case
they are again likely to process the lecture material at a 'surface'
level (Fransson 1978).

However, that is not to say that students with little background
knowledge and familiarity inevitably process the material at a 'surface'
level during lectures or never appreciate the relevance of the subject.
One of the key roles of a lecturer may well be helping such students
recognise that the subject does have something to do with the same reality as that of their daily lives— in other words that it is relevant.

The extent a lecturer is able to do this could depend very much on the relationship that exists between himself and the student. Obviously, the more the student knows, or has contact with, the lecturer, the greater is the possibility of a good relationship and the student having a favourable perception of the lecturer. For example, the extra familiarity which the second year Home Economics students got by being tutored by the lecturer may have made them more open to seeing the subject as relevant during the lectures. The second year Home Economics students who were not tutored by the lecturer certainly seemed to have the poorest opinion of the lecturer, of the course and of its relevance.

Thus both factors—background knowledge and personal acquaintance—identified in the pilot study as having an influence upon students' views can be arguably viewed as influencing student learning, and, in particular, their ability to recognise or experience the relevance of the subject.

The possibility of such a relationship interested me very much: the experience of relevance may be a key aspect of student learning from lectures and also an essential element for a 'deep' orientation.

Thus I decided to investigate more closely student experience of the relevance of specific lectures (as opposed to a lecture course) and to look further at the influences upon this. I believed the best approach was one which involved talking to students themselves about their experience. I discuss in more detail my reasons for this and describe the methodologies I adopted in Chapter 3.
CHAPTER THREE

RESEARCH APPROACH AND METHODOLOGIES
CHAPTER 3: RESEARCH APPROACH AND METHODS.

3.0 The Phenomenological Perspective to Educational Research Methodologies

At the beginning of Chapter 2 I quoted Giorgi as saying:

"One must always begin with the concrete behaviour and experience of the person in a given situation", (Giorgi op.cit.)

In recent years there has been an increasing realisation amongst educational researchers of the benefits of adopting qualitative and naturalistic approaches. And, for some researchers, this trend has been accompanied by a belief that they should start with the concrete behaviour and experience of the person in a given situation.

The trend towards qualitative and naturalistic approaches arose from a dissatisfaction with the traditional psychometric approaches. These were felt, generally, to be divorced from the reality of the classroom and, as a consequence, unlikely to produce results of much use to the practising teacher.

As Atkin commented in an early critique of the traditional approaches:

"Activity in a classroom is complex and subtle. Any one of the traditional perspectives from which investigators have viewed the educational process has been extremely narrow in relation to that process. It may be true that these perspectives that have been used from the behavioural sciences are all that we have. Perhaps it is best to work with what is available. However, the end result has been a view so simplified, or so segmented, as to have little relation to the total education process."

(Atkin 1968)

Much of the momentum for the change to more qualitative research methods has come from the field of curriculum evaluation. Within this
field there has been an increasing realisation of the need to look at whole situations rather than individual parts, as in the reductionism of traditional research. A number of related models of curriculum evaluation have evolved which attempt to be more holistic in their approach. These have been labelled as "illuminative", "responsive", and "holistic" evaluation.

These models, according to Hamilton, have inherent characteristics which are not present in traditional evaluation models:

"They are all extensive (not merely restricted to test data), naturalistic (based on programme activity rather than programme intent) and adaptable (not constrained by preordinate designs)".

(Hamilton 1976)

A key feature of the models is that they are set in the real world of the classroom and a prime aim is to understand that world. Thus, Parlett and Hamilton describe the primary concern of illuminative evaluation as:

"With description and interpretation rather than measurement and prediction."

(Parlett and Hamilton 1972)

The advocates of these holistic models of evaluation are aligning themselves with the interpretative approaches of the hermeneutic sciences such as history, anthropology, and psychiatry. Indeed, Parlett and Hamilton describe illuminative evaluation as belonging to the 'social anthropological paradigm'.

Although these new approaches put much greater emphasis upon qualitative methodologies the models are not offering 'standard methodological packages' but rather 'a general research strategy'. Of illuminative evaluation, Parlett and Hamilton say:

"It aims to be both adaptable and eclectic. The choice of research tactics follows not from research doctrine, but from decisions in each case as to the best available technique; the problem defines the method used not vice-versa."

(ibid)
The methods adopted by holistic curriculum evaluators are, in fact, quite diverse and, in certain situations, quantitative methods are considered as appropriate. The major methods adopted include observation, interview, questionnaire, documentary evidence, case studies, etc., in varying combinations. Frequently, they are those adopted in sociological field research. Indeed, the position of the evaluators regarding the status of quantitative data is probably similar to that of the sociologists Gla\'\-r and Strauss who state:

"... there is no fundamental clash between the purposes and capacities of qualitative and quantitative methods of data. What clash there is concerns the primary of emphasis on verification or generation of theory."

(Gla\'\-er and Strauss 1967)

(Glaser and Strauss are concerned with generation rather than verification.)

The traditional psychometric approaches to curriculum evaluation are generally nomothetic: their prime concern is essentially with establishing general laws, the ultimate aim presumably being the establishment of a definite law of either learning or teaching. The move towards holistic qualitative approaches is also generally a move away from nomothetic towards idiographic approaches - ones that concentrate on the intensive study of individuals:

However, as Kemmis (1978) points out, their focus of study has been more on the individual's response to the environment and the conditions of learning than on learning per. se.

Parlett himself, whilst not foresaking his sensitivity to milieu, seems to suggest that a useful contribution to the study of learning might be to pay greater attention to the individual and the 'experience of education'.
As he says:

"Thus a useful study of 'learning' might begin with a discussion and analysis with those undergoing 'learning experiences' and what they feel is happening (or has happened) to them, what precisely they are doing and thinking about."

(Parlett 1978)

The notion that a useful approach to study learning may be an experiential, phenomenological one has also been advocated by some educational researchers outside the field of curriculum evaluation, in particular, by Marton, he argues for:

"research which has as its aim to find and systematize forms of thought in terms of which people interpret and systemize aspects of reality. The kind of research argued for is complementary to other kinds of research; it aims at description, analysis, and understanding of experiences, that is, it is directed towards experiential description."

(Marton 1978)

Marton believes that educational research questions can be asked from two different perspectives. The intention of the first is to describe the world as it is, or to describe reality in 'matter-of-fact' statements. He calls this the first-order or noumenal level of description. The intention of the second, on the other hand, is to describe the world as people experience it, to describe the 'world-as-perceived': he calls this the second-order of phenomenal, experiential level of description.

In the past, Marton says, the learning process and specific content have tended to be described separately by means of a combination of matter-of-fact (first-order) statements. But, he maintains, the two cannot be separated since during the learning process the student's conceptions of the content is likely to change. Consequently, content ought to be viewed in terms of what is in the student's mind rather than what is in the textbook. Thus it needs to be described at the experiential or second-order level of description.
Marton's argument is that the process of learning is not an independent entity, divorced from the experience of content, and should not, therefore, be studied as such. It is part of how an individual experiences and conceptualises the content and should therefore be studied from this perspective.

From my reading of both the work of the illuminative evaluators and Marton I came to the conclusion that educational research should:

1) be grounded in reality; and
2) focus on the individual and the individual's experience.

In my research I have chosen methods that fulfil these two requirements.

3.1 The Case Study Method and Approach

The case study method is one frequently adopted by the illuminative evaluators in their attempts to ground their work in reality. As a method it has the virtues of being both holistic in its approach and in harmony with human experience. That it is central to illuminative evaluation is reflected in the number of papers (see, for example, Macdonald and Parlett 1973, MacDonald and Walker 1975, Adelman, Jenkins and Kemmis 1976 and Stake 1976) and the two conferences which have discussed its use in illuminative evaluation (The Cambridge Conferences 1973 and 1975).

Macdonald and Walker define a case study as 'the examination of an instance in action' and point out that:

"as a method of research, the case study commands a respected place in the repertoire of theory builders from a wide range of disciplines. Medicine, law, engineering, psychology and anthropology are examples."

(MacDonald and Walker op.cit.)
Stake reminds us of the holistic, naturalistic features of the case study:

"descriptions are complex, wholistic and involving a myriad of not highly isolated variables; ... Themes and hypotheses may be important but they remain subordinate to the understanding of the case."

(Stake op. cit.)

Adelman, Jenkins and Kemmis (op.cit) list the advantages of the case study, as seen by the participants of the second Cambridge conference:

These can be summarised as:

a) The case study is strong in reality: as a consequence the reader of a case study is able to employ the same process of judgement used to understand life and social actions around him.

b) The case study allows generalizations, either about an instance, or from an instance to a class.

c) The case study recognises the complexity and discrepancies of different and alternative viewpoints held by participants.

d) The case study provides a rich, descriptive data source for other researchers.

e) The case study occurs in a world of action and may contribute to it (e.g. in a formative evaluation sense).

f) The case study allows, at its best, the reader to judge its implications for himself.

In their first point Adelmen et al make reference to the applicability of the case study for research into human experience. Basically, they are saying that it is a method that is in harmony with everyday experience and is thus an appropriate one for studying experience.

MacDonald and Walker similarly comment:

"Whereas experimental method is conceptually asocial, the most important feature of case study in the human sciences is that it is pursued via a social process and leads to a social product."

(MacDonald and Walker op.cit.)
In the same vein, Stake writes:

"Its best use appears to me to be for adding to existing experience and humanistic understanding. Its characteristics match the "readiness" people have for added experience. As Von Wright and others stressed, intentionality and empathy are central to the comprehension of social problems but so also is information that is holistic and episodic. The discourse of persons struggling to increase their understanding of social matters features and solicits these qualities. And these qualities match nicely the characteristics of the case study."

(Stake op. cit.)

Accepting the arguments made out by these writers, I concluded that the case study went a long way to fulfilling my two criteria of wanting to ground my research in reality and to focus on the individual and individual experience. I therefore decided to base my research around case studies of 3 university lecture courses.

I chose three lecture courses whose subject I was familiar with. I believed that an understanding of the subject and, more important, a knowledge of the language and jargon would facilitate my communication with participants. I was fortunate in that I had the full spectrum of first, second and final year students represented in my three case studies.

One course was an applied physics and energy course for first-year engineering students, the intention being to ensure that they had the equivalent to an 'A'-level in Physics. I myself had an 'A'-level in Physics. The second was on research methods (for second-years). This was a subject, it was to be hoped, I had some familiarity with. The third was a final-year micro-biology course. I had read Biological Science for my first degree.

As with other methodologies which may be adopted by the illuminative evaluators, Adelman et al point out, case study methodology is eclectic. They list the most common methods:
"Techniques and procedures in common use include observation (participant and non-participant), interview, (conducted with varying degrees of structure), audio-visual recording, field note-taking, document collection and the negotiation of products (e.g. discussing the accuracy of an account with those observed)."

(Adelman et. al. op. cit.)

In my three case studies I employed all of the above methods to a greater or lesser extent. I will outline these in the next section (3.2) and then, in the following, describe them in greater detail.

3.2 Outline of the Case Studies

As I wanted to examine students' experience of lectures within their teaching and learning context, it was important that my approach allowed the uniqueness of each situation to show. Consequently, the precise approach taken in each was dictated by what was the most appropriate to that situation. I had a general plan both to try to understand the relevant teaching and learning context for each of the three courses, and to focus on a chosen sample of students' experiences. However, how I carried out the plan depended on individual circumstances.

For example, I wanted both to sit in and observe the lectures given on each course and also to talk informally to students about the lectures and the course in general (tutorials etc., as well as lectures) I hoped, with the interviews, to increase my understanding of the teaching and learning context of which the lectures were a part.

With one course, (first-year applied physics) I was able to talk to the students in a scheduled half-hour coffee-break immediately the lectures ended. This was not possible with the other two lecture courses. Consequently, in order to talk to these students about their perceptions and feelings, I attended, in addition to the lectures, the research method seminar classes and the micro-biology laboratory classes.
As I was not able to talk to everyone I asked all the students to complete an end-of-course questionnaire. This was in order to gain further information about each group's attitudes and perceptions.

The remaining aspects of the three case studies focused upon the chosen sample of students. I focused on the experiences of thirty-three students. The number was determined by the amount I could handle: the selection by the structure of one of the courses and the students' feelings about the influence of their perceptions of the lecturer as a person.

The research methods course was split into three groups, consequently, I decided to work with a number from each. There were sixty-four students taking the course and I chose to work with five students from each group, less did not seem sensible.

Working with fifteen students from this course necessarily restricted the number I could handle from the other two courses. I chose eight from the seventeen doing micro-biology and ten from the ninety-eight doing applied physics.

It was not practical to work with more applied physics students or with a representative sample. In any case this was not my objective. I was more interested in focusing on students representing a full range of opinion on whether or not they were influenced by the lecturer.

I showed, in describing the pilot study (Chapter 2), that students were apparently influenced in their opinion of the course by whether or not they knew the lecturer. Here, therefore, in the main research, I wished to explore further the influence on learning of student perceptions of the lecturer. I thus developed a key-factor questionnaire which I gave to all the students on the three courses. I was then able to identify those who apparently perceived themselves a) the most, and b) the least
influenced by the lecturer and those c) who fell in the middle of the spectrum.

With each of the thirty-three students I planned to carry out two stimulated recall sessions in which I played back to them taped extracts of lectures to stimulate their recall of their experiencing of them. I asked each to complete a repertory grid test and also whenever possible informally interviewed each. (Which I did with the other students too.)

My interest in the student perspective did not preclude an interest in developing an understanding of how the lecturers perceived the course. I maintained close contact with all three lecturers, having informal discussions with them and carrying out a stimulated recall with each of one of their lectures.

My research approach thus comprised the following methods:

Observation of lectures
Informal interviewing of students
Questionnaire survey of case study students
Selection of students by key-factor questionnaire results
Stimulated recall of lectures with selected students
Repertory Grid testing with selected students
Informal interviewing of lecturers
Stimulated recall of lectures with lecturers

3.3 Methodological Procedures and Techniques

I would like now to describe in more detail each of the methods that I chose to adopt in my three case studies.

3.3.1. Observation of lectures

My observation of the lectures served several purposes, including the following: It allowed me to develop a greater understanding of the teaching and learning context; it gave me detailed (through an observer's)
knowledge of the content and process of the lectures which allowed me
to identify the taped extracts to use in the stimulated recall sessions;
and it allowed me to develop both credibility and personal contact with
the students.

My knowledge of what and how to observe was enhanced by the literature.
In particular, by the classroom observation literature. Relatively few
studies have concerned lectures. The aim of one, reported in two separate
articles, (Casper 1973 and Carrol 1973) was primarily to help individual
lecturers improve or change their lecturing style/presentation. Casper,
in particular, emphasises the importance of the creation of trust (between
observer and the lecturer being helped) and the need for discussions
between observer and lecturer immediately after the lecture. Casper's
suggestions may be important but they were not central to my work. Carrol,
on the other hand, with her list of mechanical aspects on which the
observer might focus provided me with a useful, practical guide, particularly
in my initial efforts at identifying each lecturer's characteristic style.

She stresses the following six aspects:

1. The lecturer getting the attention of students at the start of the
class.

2. Communication among instructors and students, e.g., voice projection,
hand movement and direction of voice.

3. Communication among students, e.g., repeat questions, look for
hands.

4. Relative physical position of instructor and students.

5. Use of visual aids - including chalk.

6. Transition points and digressions.
In the classroom observation literature I found a wide spectrum of approaches, ranging from those which use pre-determined structured observational schedules to those that are exploratory and much less structured.

The structured schedule has developed primarily from the work of Flanders and his system for the analysis of classroom interactions, FIAC. A number of studies which have used this type of approach are described in Channon (1973). However, the trend in educational research for more qualitative, naturalistic studies has meant a significant move away from structured toward more exploratory studies. A number of such studies are reported by Stubbs and Delamont (1976), who also appraise the FIAC and other structured approaches. They make three main points about FIAC (which are pertinent to most such approaches):

1. It is designed to classify interaction, that is public talk involving more than one person.
2. It concentrates in its design on teacher talk.
3. It assumes the greatest learning occurs in a democratic, integrated classroom.

Factors 1 and 3, in particular, tend to confirm the inappropriateness of adapting a schedule of this type for the purpose of observing lectures. Taking the first point, an instrument which is designed to classify interaction that is public talk, involving more than one person, is not likely to be of great value in the lecture situation where most of the public talk involves, usually, the lecturer alone.

This very point makes Delamont's second factor not so inappropriate; it would seem reasonable for me to use an instrument designed to concentrate on teacher talk.

As far as the third factor is concerned, it cannot be assumed that the lecture represents a democratic integrated classroom, which is not
to say that it could not be that. In any case, the question of whether more learning occurs in such a classroom - assumed in the Flanders schedule - is not one my research sought to explore. My research is not a comparative study of the amount or kind of learning that occurs in lectures as opposed to other teaching and learning events. It is confined to lecture situations and is a study of student learning in and experience of these.

The more qualitative and holistic emphasis of the exploratory approaches seemed to have more in common with my own methodological emphasis. Consequently, I looked to these as a more useful source of ideas.

One particularly valuable source was Walker and Adelman's "A guide to Classroom Observations" (1975), which is aimed at helping researchers who want to acquire a holistic understanding of the classroom. The authors offer a wide range of guidelines of what to look for and observe and, for the most part, I thought their ideas were as valuable for guiding observations in the lecture room as in the classroom. They divide their suggestions into five categories:

1. Physical Setting: Location, wear and tear of furniture, unexpected equipment, posters, temperature, etc.
2. The pupils: Number, sex, age, who arrives first, pattern of spacing, who sits at back, jokers, etc.
3. Teacher: When enters room (first, last, etc.), first gesture, how different inside classroom to outside, response to questions, use of analogies, pauses, etc.
4. Resources: What apparatus, material are available, what technical assistance is available, who has access to resources etc.
5. The Lesson: Designation on time-table, who teaches it, aim of lesson, how does it relate to a sequence or theme, etc.

Walker and Adelman alerted me to a number of points that I might otherwise have let slip by, at least initially. These were often quite obvious points, once they were pointed out: who sits at the back?, when does
3.3.2. Informal Interviews

I hoped through informal interviews to understand better the teaching and learning context of which the lectures were a part. In particular, I wanted to understand the common definitions each group of students made of their situation.

The idea that groups come to a common definition of their shared situation is one discussed by Furlong (1976). He refers to the group who have such a common definition as an 'interaction set'. He explains that this does not necessarily mean individuals act in the same way; only that individuals, within the interaction set, see the situation in the same way. However, this common definition is likely to influence how the individuals within the set do act. One would expect each individual's definition of the situation as likely to be initially different from that arrived at by the interaction set. It is thus necessary for each to establish a common point of contact between their own definition and that of others in the interaction set which, according to Furlong, demands compromise.

Furlong found in his work that the teacher and the learning context he or she provided were significant influences on students in their making of definitions of classroom situations; and that student interest in the subject was strongly dependent upon the learning context provided by the teacher.

Furlong's findings give support to both the importance of acknowledging that the individual's approach to a lecture occurs within a
specific learning context and of taking into account the group's definition of the situation when looking at the actions of the individual.

The informal interview I conducted would appear to be of the type described by S ö zman and Strauss as 'situational conversation' or, in further descriptions, as "brief situational or 'incidental' questioning or conversation" (S ö zman and Strauss 1973). Thus, I talked to my interviewees when and where I could, in whatever situation they happened to be in, and for relatively brief durations. Generally, I tried not to direct the conversation but more listen to and note what the students had to say. As S ö zman and Strauss point out, it is not really possible to describe in detail how one should conduct interviewing of this type, except to say, the researcher needs to be patient, polite and cautious.

3.3.3. The Course Questionnaires

The purpose of the course questionnaires was again to explore the common definitions of each of the 3 lecture situations. I used a different questionnaire for each.

In the informal interviews - where I spoke to most of them in any case - the micro-biology students came over as fairly homogeneous in their views. Consequently, I asked these students to complete only a short questionnaire on their perceptions of the lecturer.

The questionnaire was one that I had developed with David McConnell in a separate project on lecture - feedback. In this project we had tried to describe general teaching variables such as 'clarity', 'rapport with students', etc., in terms of what, specifically, they meant to students. From our descriptions we developed a series of eight questionnaires each of which dealt with one general teaching variable in more specific terms. We also developed a general questionnaire which incorporated a selection
of questions from each of the eight specific questionnaires. We used Kelly's personal construct theory and repertory grid technique as a basis for constructing the questionnaires. (I shall discuss the repertory grid in Section 3.3.6.)

It was the general questionnaire which I gave to the micro-biology students. It consisted of 19 questions covering 8 general variables.

The research method students, unlike the micro-biology students, were, on the basis of my interviews, more diverse in their views about the course. Each of the three distinct groups on the course had different ideas about it. Consequently, I asked the research method students to complete a questionnaire that included the micro-biology questionnaire but had further items that had arisen in the informal interviews. These were associated with issues upon which the groups of students seemed to differ from one another.

The applied physics questionnaire was altogether different: it was developed in association with the 'Teaching Support Programme' at Sussex University, and was more far-ranging than either of the other two. The Sussex programme was evaluating the applied physics course as a whole and was looking at tutorials, seminars and practicals as well as the lectures. We did include a range of questions on the lectures and lecturer however and it was the students responses to these that I mainly concentrated on in my own study.

3.3.4. Key Factor Questionnaire

The aim of the Key Factor questionnaire, given to all students, was to estimate the extent to which they took into account their perceptions of the lecturer's attitude and feelings towards them when considering the lectures. All 18 questions (shown in Figure 3.1) were taken from the lecture - feedback questionnaires. Seven of the questions were chosen
STUDENT QUESTIONNAIRE

Could you please complete the following questionnaire which is concerned with discovering what factors influence your opinion about lectures.

Do you feel the following factors influence your opinion as to whether or not you like the lectures given on this course. Please indicate your answers by circling the most appropriate response on the scale provided.

Are you influenced by whether the lecturer:-

<table>
<thead>
<tr>
<th></th>
<th>Definite Influence</th>
<th>Some Influence</th>
<th>Little Influence</th>
<th>Scarcely Any Influence</th>
<th>No Influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Uses humour or not</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Does/does not add interest by making occasional digressions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Is or is not enthusiastic for the subject</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Does/does not give dry formal lectures</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Does/does not treat you as an equal and with respect</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Uses examples or not</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. Does/does not enable you take good notes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. Does/does not achieve good student-lecturer rapport</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. Is or is not open and outgoing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. Does/does not invite questions during lectures</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. Does/does not give structured organised lectures</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. Does/does not make the lectures interesting and chatty</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. Appears interested in you, or not</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. Is or is not approachable and friendly</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. Does/does not give lectures which are precise, clear and at the appropriate pace</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. Is or is not helpful in what he says and does</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. Does/does not appear to have a wide knowledge of the subject</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. Is or is not concerned that students understand</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Please complete the following details: Name: ...........................................

Department and Degree Course: ...............................................................

Thank you for your time and assistance.
for their focus on the lecturer's attitude to students, five of them were from the questionnaire on "lecturer's attitude to students," two from that on "students perceptions of the lecturer."

I called these seven questions the 'key factor' (KF) questions. They ask whether the lecturer:

(5) Does/Does not treat you as an equal and with respect
(8) Does/Does not achieve good student - lecturer rapport
(9) Is or is not open and outgoing
(13) Appears interested in you or not
(14) Is or is not approachable and friendly
(16) Is or is not helpful in what he/she says or does
(18) Is or is not concerned that students understand.

The other 11 questions were chosen because they seemed to represent best other important, but not interpersonal, teaching behaviours such as the lecturer's enthusiasm and his structuring of lectures. I termed these the 'other factors' (OF) questions.

In completing the questionnaire the students were asked, as Figure 3.1 shows, to indicate on a 1 - 5 point scale whether they felt their opinion of lectures was influenced by the listed teaching characteristics and behaviours. A (1) response indicated the student felt they were highly influenced and (5) not at all influenced.

From the student responses I calculated for each student a 'Key Factor score'. This was done by first calculating the mean rating given for the 7 KF questions and the mean rating for the 11 OF questions. I then subtracted - for each student- the mean OF questions score (which was proportionally higher the less a student felt himself to be influenced by the points in the OF questions) from the mean KF question score (which was lower the more a student felt influenced by those specific points).

This gave me the 'KF' score.'
A negative KF score indicated the student felt himself to be more influenced by his perceptions of the lecturer's attitude to students than by the types of teaching characteristics described in the OF questions. A positive KF score, on the other hand, implied the student felt himself to be more influenced by the OF characteristics in his opinion of the lectures.

I ranked the students from each course on the basis of their KF scores and chose equal numbers of students with the most negative and least negative (or most positive) KF scores and with mid-range scores.

Thus, I chose students who were potentially the most and least likely to be influenced by their interpersonal perceptions of the lecturer and also students who fell into the middle area.

However, having used the KF scores to select the students on whom to focus, I did not rely solely on that method to investigate their perceptions of the lecturer. To gain greater depth I asked the students to carry out a repertory grid test, which I will describe later.

3.3.5. Stimulated Recall

The methods described so far were mostly used to investigate the teaching and learning context of the lectures and the students' experience of this. Now, I will describe the methods I used to focus on individual student's experience of specific lectures. One method was Stimulated Recall, which was originally developed to compare students thought processes in lectures and discussion groups (Bloom 1953).

Stimulated recall involves audio taping the teaching situation and then, within 2 days, playing back to individual students extracts from the session. The student is then asked to recall the thoughts he or
she had during the original situation. As Bloom explains:

"The basic idea underlying the method of stimulated recall is that a subject may be enabled to recall an original situation with vividness and accuracy if he is presented with a large number of cues or stimuli which occurred during the original situation."

(Bloom op.cit.)

Siegel and his colleagues, in a later study, made a somewhat different use of the method. Here, the students attended not a live lecture but a video-recorded lecture. Immediately after watching it they were tested on the content of what they had been lectured on. Then extracts were played back to them (still as a group) and they were asked to write down what they had been thinking during the original presentation (Siegel L, Siegel L.C., Capretta P.J., Jones R.L. and Bower, H. 1963).

Siegel et al. found a correlation between the test score (assumed to be a measure of the knowledge gained from the original presentation) and the relevance of the thinking recorded by the students. They argue that they were improving upon Bloom's approach in three ways:

1) The recall is better the sooner it is done.
2) Audio-tape reproduces only a portion of the original classroom experience.
3) Their version is less laborious than that of collecting data on an individual basis.

Bloom, in his defence of using only auditory cues, points out:

"The cues which would seem to be most attended to and which are most equally available to all in the classroom are the auditory cues. In most classrooms, verbal forms of communication are central and all members of the group are expected to attend such cues. In addition, sound cues are most easily recorded and most convenient for playing back to students."

(Bloom op.cit.)

The point, in fact, is not whether video-recordings are preferable but whether audio-recordings provide adequate cues. For, as Bloom remarks,
they are much more easily obtained (in that they can be obtained more discreetly) and are also more convenient for playing back.

Bloom tested the adequacy of audio cues for stimulating recall of overt events by playing back extracts to students who were then asked what overt events (i.e. activities, specific talk, or particular gestures and mannerisms) followed immediately after that particular point in the recording. He found recall of the events was 95% accurate provided this was done within 2 days of the original experience. (Bloom op.cit.) It might possibly be assumed from this that students can recall their own thoughts during the extract with similar accuracy.

I thought that Bloom's results did provide support for the effectiveness of the more convenient method. I decided, therefore, to use audio and to play back the extracts well within Bloom's safe period, in fact, within 24 hours. Like Bloom, too, I preferred to do recalls with individual students since, in my case, it allowed me, when necessary, to probe further students' responses.

Both Bloom and Siegel et al. themselves chose the extracts ("critical incidents") to play back to students. Bloom gives no indication of the criteria he used for his choice. Siegel et al., however, explains:

"A critical point was grossly identified as any point in the lecture that would be likely to evoke some kind of student thinking. Operationally, at such points the lecturer generally asked a question, defined a term or attempted to synthesise and relate concepts."

(Siegel et al. op.cit.)

I chose the extracts in my research in a way that was operationally not dissimilar to Siegel's. My main criteria however was whether the extract reflected what I had observed to be aspects of each lecturer's characteristic
style of lecturing. In this way, I hoped to examine the influence their
different strategies had upon students' experience.

An alternative approach was used by Kagan and Krathwohl who video-
taped a number of interactive situations. They then played back the
tapes to the participants who, with the help of a trained recall inter-
viewer, were encouraged to call for the tape to be stopped when they
had something to recall. The interviewer's overall purpose was to help
participants relive their experience and to interpret their feelings,
thoughts, bodily motions and other processes (Kagan and Krathwohl, 1967).
The key difference in this approach is that the participants themselves
are mainly responsible for the selection of extracts.

The emphasis in Kagan and Krathwohl's approach is upon interactive
situations, which are not entirely comparable to lecture situations.
Nonetheless, I think it would be worthwhile to explore their approach
in any future study of students' experience of the lecture situation.

3.3.6. Repertory Grid Technique

The repertory grid technique was one way in which I explored each
student's perceptions of the lecturers. Other data about their perceptions
came from stimulated recall sessions and interviews as well as the end-
of-course questionnaires.

The repertory grid was invented by G.A.Kelly as a method for exploring
personal construct systems through which Kelly claims we make sense of
the world.

As Fransella and Bannister describe the grid:

"It is an attempt to stand in the others' shoes, to see their world
as they see it, to understand their situation, their concerns."

(Fransella and Bannister 1977.)
To understand how Kelly believes repertory grid achieves this it is necessary to refer briefly to his personal construct theory from which it derives. Personal construct theory is based on Kelly's philosophical position of 'Constructive Alternativism' (Kelly 1955, Kelly 1966). Kelly explains that constructive alternativism assumes all events (and all facts) are subject to as great a variety of constructions as we are able to think up, and more if we only had the capacity to invent alternative constructions:

"Whatever the world may be, man comes to grips with it only by placing his own interpretations upon what he sees."

'(Kelly, 1966).

The process with which, according to Kelly, each person perceives and understands their world is described in what he terms the "Basic postulate" of personal construct theory:

"A person's processes are psychologically channelized by the way in which he anticipates events."

(ibid.)

What Kelly is saying is that how one anticipates what will happen in the future determines what one does now. Thus Kelly's view of man is often described as 'man the scientist', continually exploring his world.

Kelly elaborates the process in 11 corollaries. According to the 'construction corollary', a person anticipates events by construing their replication. He accepts events never repeat themselves but maintains that one can only look forward to events, or anticipate them, by devising some construction which permits one to perceive one's experience of two events in a similar way. But, as he points out, the same construction that serves to infer this similarity must serve also to differentiate them from others.
So Kelly is not only saying that each event can be perceived (or construed) in as many ways as it is possible to invent constructions for it: he is also saying the constructions one uses are formulated on the basis of how we perceive (or anticipate) the similarities and differences of that event with other events (experiences) previously experienced (or construed). The repertory grid derives from the notion that we simultaneously note likenesses and differences: it is an attempt to explore the structure and content of a person's construct system and thus 'see their world as they see it.'

Thus, when completing a repertory grid, the subject is asked to compare and contrast elements in his environment stating the constructs by which they perceive two of them as being alike and at the same time different from a third. Through this process constructs used by the subject are elicited and a picture of how he or she uses them when discriminating between the different elements in the grid emerges.

I did not assume students' grids would provide a definitive description of their perceptions, they did however, provide some indication of how each student perceived their lecturer - whom I made one of the elements - particularly in relation to other significant people, including other lecturers they liked or disliked (the other elements).

The grids that I asked the students to complete and the analysis of them are fully described in Chapter 8.

I had also used the repertory grid in the lecture feedback project (see section 3.3.). There, McConnell and I had asked students to select lecturers - to be the elements in the grid - on the basis of specific criteria. There were, 'stimulation of student interest', 'enthusiasm for lecturing', 'attitude towards students', 'communication of knowledge of subject' and 'encouragement of student participation'. 
We then asked them to compare and contrast the lecturers using their own constructs. From the students' responses we were able to compile lists of students' constructs which described general teaching variables more specifically. It was from these that we constructed the eight questionnaires - each dealing with one general teaching variable - and the general questionnaire used in the micro-biology and research method courses.

3.4 Summary

My choice of research methods was determined by my objective to ground the research in reality and to focus upon individuals' experience. By choosing to do 3 case studies of lecture courses I immediately grounded the research in reality, and I used both informal interviews and course questionnaires to gain a better understanding of that reality, as experienced by the students. Through the use of stimulated recall I focussed upon individual students' experience of the lectures and of specific lecture content. These students were chosen on the basis of the responses to the KF questionnaire which identified those students at either end, and in the centre, of the continuum of whether or not they were influenced by interpersonal perceptions of their lecturer in their opinion of the lectures. I used the stimulated recall, interview questionnaire data and repertory grid to explore further what their perceptions of their lecturers were.
CHAPTER FOUR

CASE STUDY 1: THE SOCIAL RESEARCH METHODS COURSE
CHAPTER 4 Case Study 1: The Social Research Methods Course

4.0 Introduction and Background

In this, and the following two chapters, I shall look at each case study in turn. I shall describe the teaching and learning context of the lecture courses and how students experienced the relevance of specific lectures.

The social research methods course was the same course as that in the pilot study (Chapter 2) but one year on. The types of student groups, however, were slightly different. The course was still taken by second-year Human Science (H.Sci.II) and Home Economics (Ho.Econ.II) students, but not by the fourth-year Home Economics students. There were, though, two additional groups: second-year students taking Economics, Social Science and Statistics (ESS 11) and Social Administration Diploma students (from Guildford College of Technology). This last group of students only sat in on the lectures and I excluded them from the study.

The term 'teaching and learning context' may not be immediately clear. It is the social-psychological and material environment forming the background to the experience of any individual or group. From the point of view of my study it is the total environment that has to be taken into account to begin to understand the experiences of each of the three groups. It can be contrasted with the 'learning milieu', which is the course environment (i.e. research methods course) and is defined by Parlett and Hamilton as:

"The social-psychological and material environment in which students and teachers work together. The learning milieu represents a network or nexus of cultural, social, institutional and psychological variables. These interact in
complicated ways to produce in each class or course a unique pattern of circumstances, pressures, customs, opinions and work styles which suffuse the teaching and learning that occur there. The configuration of the learning milieu, in any particular classroom, depends on the interplay of numerous constraints (legal, administrative, occupational, architectural and financial) on the organisation of teaching in schools; there are pervasive operating assumptions (about the arrangement of subjects, curricula, teaching methods and student evaluation) held by faculty; there are the individual teacher's characteristics (teaching style, experience, professional orientation and private goals); and there are student perspectives and preoccupations."

(Parlett and Hamilton, 1972.)

What is not made clear in Parlett and Hamilton's definition is that the different groups of students within a given learning milieu may come from, or form part of, different teaching and learning contexts where similarly there are networks of cultural, social, institutional and psychological variables, particular constraints on the organisation of teaching, different perspectives and preoccupations etc. Thus the teaching and learning context of an individual or group comprises of those learning milieu variables and conditions that are particular to them.

The elements of the research methods course, of which the lectures were one, varied for the different groups. I will, therefore, now describe the main elements contributing to the teaching and learning context for each of the student groups.

There was only one aspect of the course that was common to all three groups: the weekly lectures on a Thursday afternoon at 2.00p.m. All the students, however, also attended tutorial classes and carried out, as individuals, assessment exercises. A different tutor from the sociology department took each of the student groups for their tutorial classes. Each group was split into two for these classes, the time-tabling and format of which are set out in tables 4.1 and 4.2. I have designated the two halves of each group as A and B respectively.
Table 4.1.  
Timetable and format of research methods course

1) Autumn Term Only.

<table>
<thead>
<tr>
<th>Student Group</th>
<th>Nos. of Students</th>
<th>Day of Class</th>
<th>Time of Class</th>
<th>Length of Class</th>
<th>Tutor</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. Sci. II A</td>
<td>7</td>
<td>every other Tuesday</td>
<td>11.00 - 1.00 p.m.</td>
<td>2 Hours</td>
<td>Course Lecturer</td>
</tr>
<tr>
<td>H. Sci. II B</td>
<td>8</td>
<td>alternate Tuesdays to A</td>
<td>11.00 a.m. - 1.00 p.m.</td>
<td>2 Hours</td>
<td>Course Lecturer</td>
</tr>
<tr>
<td>ESS 11 A</td>
<td>12</td>
<td>every other Tuesday</td>
<td>11.00 a.m. - 1.00 p.m.</td>
<td>2 Hours</td>
<td>Tutor 'X' from Sociology Department</td>
</tr>
<tr>
<td>ESS 11 B</td>
<td>12</td>
<td>alternate Tuesdays to A</td>
<td>11.00 a.m. - 1.00 p.m.</td>
<td>2 Hours</td>
<td>Tutor 'X' from Sociology Department</td>
</tr>
<tr>
<td>Ho. Econ. II A</td>
<td>12</td>
<td>Monday</td>
<td>4.00 - 5.00 p.m.</td>
<td>1 Hour</td>
<td>Tutor 'Y' from Sociology Department</td>
</tr>
<tr>
<td>Ho. Econ. II B</td>
<td>13</td>
<td>Tuesday</td>
<td>10.00 - 11.00 a.m.</td>
<td>1 Hour</td>
<td>Tutor 'Y' from Sociology Department</td>
</tr>
</tbody>
</table>
Table 4.2. Timetable and format of research methods course

II) Spring Term Only.

<table>
<thead>
<tr>
<th>Student Group</th>
<th>Nos. of Students</th>
<th>Day of Class</th>
<th>Time of Class</th>
<th>Length of Class</th>
<th>Tutor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hu.Sci. II A</td>
<td>7</td>
<td>every other Tuesday</td>
<td>11.00 - 1.00p.m.</td>
<td>2 Hours</td>
<td>Course Lecturer</td>
</tr>
<tr>
<td>Hu.Sci. II B</td>
<td>8</td>
<td>alternate Tuesdays to A</td>
<td>11.00 - 1.00p.m.</td>
<td>2 Hours</td>
<td>Course Lecturer</td>
</tr>
<tr>
<td>Ess II A</td>
<td>12</td>
<td>Thursday</td>
<td>11.00 - 12.00</td>
<td>1 Hour</td>
<td>Tutor X</td>
</tr>
<tr>
<td>Ess II B</td>
<td>12</td>
<td>Thursday</td>
<td>3.00 - 4.00</td>
<td>1 Hour</td>
<td>Tutor X</td>
</tr>
<tr>
<td>Ho. Econ. II A</td>
<td>12</td>
<td>Monday</td>
<td>2.00 - 3.00</td>
<td>1 Hour</td>
<td>Tutor Y</td>
</tr>
<tr>
<td>Ho. Econ II B</td>
<td>13</td>
<td>Tuesday</td>
<td>2.00 - 3.00</td>
<td>1 Hour</td>
<td>Tutor Y</td>
</tr>
</tbody>
</table>
Summarising the above tables: The human science students had a two-hour class every alternate week with the course lecturer for both the Autumn and Spring terms. The ESS students had a two-hour class every alternate week in the Autumn term and a one-hour class every week in the Spring term. This change was made by the mutual agreement of the students and the class tutor. The home economics students had weekly, one-hour, classes for both terms, but at different times for each term.

The assessment exercises consisted of six set pieces of work. (This was later reduced to five for the ESS students). The exercises were essentially the same for all the students but contained slight changes of wording, etc., to make them more relevant for the home economics students. For example, in exercise 3, on sampling procedures for surveys, the human science and ESS students were asked to work on attitudes towards the redevelopment of the High Street; but for home economics students, this was changed to attitudes towards a plan to open a supermarket in the middle of Little Stipling.

This course work represented the total assessment load for the course: there were no formal end-of-year examinations.

4.1 Choice of Students

The pilot study had indicated that students from the different student groups had different ideas and attitudes towards the research methods course and its relevance. Consequently, I decided, in the main case study to study the experience of five students from each group. I chose the students, as I explained in Chapter 3, from their responses to the key-factor questionnaire (administered at the beginning of the
course) selecting those at three different points on a continuum of whether they believed their opinions of lectures were influenced by their interpersonal perceptions of the lecturer. The assumption I made was that students who felt their opinion was influenced by such perceptions would give relatively higher ratings for being influenced by personal factors (whether the lecturer 'does or does not achieve good student - lecturer rapport'; 'appears interested in you or not') than more impersonal factors (whether the lecturer 'does or does not appear to have a wide knowledge of the subject'; 'does or does not have a dry formal delivery'). As I said earlier (Chapter 2, section 2.3) I was interested in the influence of students' perceptions of the lecturer upon their experience of the relevance of the lectures.

By picking students at either extreme of the scale, I had students who were potentially highly influenced by personal perceptions and students who potentially were not. I chose the two students with the highest negative and the two with the highest positive key factor scores from each group, (excluding those students with scores with a standard deviation of one or more) and I also took one student, chosen at random, with a mid-range score from each group.

The students chosen were respectively designated as human science 1 - S H Sci., economics social science and statistics students 1 - S ESS and home economics students 1 - S Ho Econ. Numbers 1 and 2 in each group were those who might be more influenced by personal perceptions.

My next task was to gain the consent of the relevant students to do two stimulated recalls of lectures and to complete a repertory grid. The first part of the autumn term was spent getting to know the students in general, discovering their views of the course as it developed and observing the lecturing style of the lecturer. I
did not start on the stimulated recalls until near the end of the term: consequently the majority were conducted in the spring term. However, a number of students had stopped attending lectures by the spring term and I was unable to carry out stimulated recalls with them. Since I was interested in these students reasons for non-attendance and their experience of the relevance of the subject and course I did not find substitutes for them from among other students. Instead I endeavoured to interview them and ask them to complete grids, succeeding in three cases (1ESS, 3ESS and 1 Ho.Econ.) but failing in the fourth (5ESS). According to his class-mates, 5ESS attended very little of anything and was considered, by them, very likely to drop out at the end of the year. In fact, 5ESS did not drop out but opted to do an industrial year before completing the final year of his course. Due to their increasing non-attendance I was able to do only one stimulated recall with one ESS student (4ESS) and one human science student (5 H. Sci.)

4.2 The Course Questionnaire

During my study I again (as in the pilot study) found that different attitudes and ideas about the course were expressed by each of the three groups of students. The prevalent ideas within a group are an important feature of the teaching and learning context. Consequently, I administered a questionnaire at the end of the course to all the students in order, primarily, to discover the extent the students' views differed on particular issues that were represented in the questionnaire. (See Appendix A for copies of the questionnaire and 'reminder' notes.)
A preliminary analysis of the questionnaire identified those questions where the student groups showed the most distinct differences in attitudes and views in their responses and eliminated from further analysis the responses to several questions which generally elicited little extra insight and to those questions which were better asked by other questions.

I made a further analysis of the data from 6 of the 12 questions. These were about the inclusion of research studies and examples in lectures (Questions 2a and 2b); material displayed on the overhead projector (2c); a question on the use of sociological terminology (3); the organisation and structure of classes (4); the influence of timetabling (6); the general reaction to the exercise (7); and overall relevance of the course (12).

I masked both the name and the degree course of each respondent before I analysed the questionnaires further. I then put them in random order. By this procedure I hoped to reduce the bias of any expectations of the different groups that I already had or might build up whilst analysing the questionnaires. I then coded the responses to each of the 6 questions and got two people to check this by analysing the same sample of 20 questionnaires (also chosen at random).

Table 4.3 shows the percentage of students from each group who made: a) one or more positive, favourable statements in their responses to anyone of the questions considered and b) one or more negative, critical statements in their responses to anyone of the questions. (The figures represent the fact that students made both positive and negative statements in the same response)
Table 4.3.

**SUMMARY OF RESEARCH METHODS QUESTIONNAIRE RESULTS**

<table>
<thead>
<tr>
<th>Percentage of Students making</th>
<th>H. Sci.</th>
<th>ESS</th>
<th>Ho. Econ.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positive comments about:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Inclusion of Research Studies</td>
<td>92</td>
<td>75</td>
<td>45</td>
</tr>
<tr>
<td>2) Inclusion of Examples</td>
<td>85</td>
<td>100</td>
<td>82</td>
</tr>
<tr>
<td>3) Material displayed on O.H.P.</td>
<td>77</td>
<td>50</td>
<td>64</td>
</tr>
<tr>
<td>4) Reactions to Sociological terminology</td>
<td>92</td>
<td>62½</td>
<td>41</td>
</tr>
<tr>
<td>5) Organisation &amp; structure of classes</td>
<td>92</td>
<td>12½</td>
<td>34</td>
</tr>
<tr>
<td>6) Influence of timetabling on lecture attendance</td>
<td>54</td>
<td>37½</td>
<td>18</td>
</tr>
<tr>
<td>7) Influence of timetabling on tutorial attendance</td>
<td>92</td>
<td>62½</td>
<td>41</td>
</tr>
<tr>
<td>8) General reaction to exercises</td>
<td>85</td>
<td>69</td>
<td>67</td>
</tr>
<tr>
<td>9) Overall relevance of course</td>
<td>92</td>
<td>75</td>
<td>93</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage of students making</th>
<th>H. Sci.</th>
<th>ESS</th>
<th>Ho. Econ.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Negative or critical comments about:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Inclusion of Research Studies</td>
<td>-</td>
<td>12½</td>
<td>60</td>
</tr>
<tr>
<td>2) Inclusion of Examples</td>
<td>8</td>
<td>12½</td>
<td>23</td>
</tr>
<tr>
<td>3) Material displayed on O.H.P.</td>
<td>61½</td>
<td>50</td>
<td>59</td>
</tr>
<tr>
<td>4) Reactions to Sociological Terminology</td>
<td>8</td>
<td>12½</td>
<td>59</td>
</tr>
<tr>
<td>5) Organisation and structure of classes</td>
<td>18</td>
<td>87½</td>
<td>59</td>
</tr>
<tr>
<td>6) Influence of timetabling on lecture attendance</td>
<td>38</td>
<td>50</td>
<td>73</td>
</tr>
<tr>
<td>7) Influence of timetabling on tutorial attendance</td>
<td>-</td>
<td>31</td>
<td>36</td>
</tr>
<tr>
<td>8) General reaction to exercises</td>
<td>54</td>
<td>50</td>
<td>68</td>
</tr>
<tr>
<td>9) Overall relevance of course</td>
<td>15</td>
<td>31</td>
<td>30</td>
</tr>
</tbody>
</table>

**Questionnaire Response Rate:**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>H. Sci.</td>
<td>13 replies i.e. 87%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ho. Econ.</td>
<td>22 replies i.e. 88%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESS</td>
<td>8 replies i.e. 33 1/3%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
An examination of Table 4.3 shows clearly that there were differences between the three groups. For example, the human science students were decidedly more positive towards the inclusion of research studies than, in particular, the home economics students. The latter were decidedly the most negative towards the use of sociological terminology. The ESS students were the most negative towards the organisation and structure of the classes. The perceived relevance of the course was high for both the human science and home economics students and medium for the ESS students.

I do not wish to labour the differences between the student groups. My aim is simply to illustrate that there was evidence of distinctly different ideas and attitudes. Again, I have not attempted to give a full description of the teaching and learning context of the course for each of the student groups. However, I think the above results, together with my description in section 4.0 of other, structural, differences, provides sufficient evidence to support my statement at the beginning of this Chapter that "the teaching and learning context of the research method lectures was different for each student group."

4.3 Students' Orientation to the Course

I would like to now move away from different teaching and learning contexts to considering individual students' experience of the relevance of the lectures. I shall, however, take into account each student's group membership and, therefore, their particular teaching and learning context.
I started this examination with a preliminary analysis of the stimulated recall sessions. In these sessions the students had both described what they were doing and/or thinking at the time of the extract and explained why they thought they had responded in the way they had. The sessions were, thus, very rich in information. I attempted to impose some structure (though one low on inter on this information by categorising each statement made according to the general area of concern it reflected. The majority of statements fell into one of the following areas:

(i) Background experience  
(ii) Assessment  
(iii) Personal Relationships (and perceptions)  
(iv) Presentation  
(v) Work and Study Habits  
(vi) Relevance and Interest

I thus had an initial framework to help me make sense of and organise the stimulated recall data and come to the following descriptions of each student's orientation towards the course.

1 The Human Science Students

1 H.Sci: He emphasised the influence of assessment requirements upon his approach to the course. However, the lecturer's use of examples seemed to influence his experience of the relevance of the content, because they related to "real life situations."

Also, through an existing familiarity with some of the content he was sometimes able to integrate the content into his own framework of knowledge and thinking.

2 H.Sci: Although not experiencing as strong an influence from assessment requirements, did tend to see the relevance of the content either through the lecturer's examples or through her perception of the lecturer's interest or enthusiasm for the content.
She was not totally consistent in this, however, and did on occasion relate to the lectures in a way more meaningful to her own experience. As with 1 H.Sci. this often occurred if she had previous experience or knowledge of the content.

3 H.Sci, 4 H.Sci and 5 H.Sci seemed, to a greater or lesser extent, able to experience the relevance of the lectures in a way more meaningful to themselves. As part of this, they were able to relate the content to existing knowledge or experience. This was not without due account being paid to both assessment requirements and perceptions of the lecturer.

I have not in the above descriptions of the human science students mentioned presentation and delivery of the lecturer. In fact, both 1 H.Sci and 2 H.Sci commented that the lectures were straightforward and easy to understand, and similar remarks were made by the other three human science students.

(2) Economics Social Science and Statistics

2 ESS was assessment-orientated in his approach to his degrees. An off-shoot of this was that he did not perceive the research methods course as very important to his academic needs. He did, none the less, seem to have the experience and knowledge quite frequently to experience the content in a way meaningful to himself and his framework of thinking.

4 ESS was not, unlike the other ESS students, particularly assessment orientated. She did not, however, seem to experience the content as having a meaning and relevance to which she could relate. This was despite a professed familiarity with the subject.

4 ESS did relate more to descriptions of studies which the lecturer had herself done, but in a way that was isolated from the
rest of the lecture content. Her appreciation of the relevance of research methods was at a very general level.

Neither 2ESS or 4ESS apparently saw the relevance of the lecture content, like 1 H.Sci or 2 H.Sci, through either the lecturer's interest and enthusiasm or illustrations and examples.

Both 1 ESS and 3 ESS were assessment-orientated in their approach to the course. They considered it to be low priority and did not attend the lectures on a regular basis. In the interview they both said they had little previous experience or familiarity with the subject. 1 ESS did see the relevance to himself of doing the subject but 3 ESS had only a vague impression of its potential relevance to himself.

(3) Home Economics Students

All of the home economics students seemed to be assessment orientated to the research methods course. They viewed the relevance of lectures in terms of assistance with and completion of the assessment exercises.

The students accredited this orientation as being due to possessing little or no background knowledge of the subject. In this they seemed to be saying that they did not have a framework of their own into which they could place the lecture content and consequently merely took note of points which, by their labelling, they thought would be relevant to one of the exercise they would later have to do.

At the most extreme, the doing of the exercises was simply a means to the end of obtaining a degree. This was the view of the 4 Ho. Econ.
3 Ho. Econ and 5 Ho. Econ. did find that the lecturer's examples helped them to see better the relevance of the content. 2 Ho. Econ professed to like the examples but it was in a way that was limited to the examples for their own sake rather than to the lecture content as a whole.

None of the home economics students seemed to experience interest or enthusiasm for the content as a result of the lecturer's presentation. None mentioned that they found the lecturer direct and understandable: if anything, the reverse.

1 Ho. Econ. found the lectures so divorced from her assessment orientation that she had stopped attending them altogether.

Finally, the home economics students seemed unsure of the exact relevance of research methods to themselves.

4.4 Levels of Experience of Relevance

It seemed to me that these descriptions of student orientation towards the course indicated that a student was likely to experience the relevance of the lecture content in essentially one of three different ways. These were:

1) Through assessment
2) Through the lecturer
3) Through their own understanding, knowledge and interest.

The first is an extrinsic experience of relevance in that the content is regarded from the point of view of achieving some external demand upon the person. For example, the home economics students very often experienced the relevance of the lectures from the point of view of the assessment exercises they had to do.
The second is vicarious in that either the lecturer's perceived interest and enthusiasm for the material is transferred to the student (for example 2 H.Sci.) or, in discussing a particular point, the lecturer provides something - an illustration, example or description of her own experience - which the student finds he is able to identify with and take on board as something he can recognise and find interesting. Thus, it is the illustration, etc., that the student relates to rather than any issues under discussion. 1 H.Sci. and, to a lesser extent 3, and 5 Ho.Econ are examples of students who, on occasions, experienced the relevance of the content vicariously.

The third way (the student's own understanding, knowledge and interest) is an intrinsic experience of relevance because the student can see the relevance of the content in a way meaningful to him or herself. For example, 3 H.Sci., 4 H.Sci., and 5 H.Sci. apparently experienced the content in such a way.

In the next stage of the analysis I attempted to ascertain the extent to which each student experienced the content of the lectures either extrinsically, vicariously or intrinsically. I extracted from both the transcripts and tapes of the stimulated recalls and interviews each statement with the slightest indication of an experience of lecture relevance.

Thus, I extracted all statements:

(i) describing, explaining or discussing the students response to any part of a lecture;

(ii) referring either directly, or indirectly, to influences upon approach or response to the lectures or the specific extract;

(iii) referring to the lecturer and her presentation.
I excluded statements that were essentially background information about self and thus not associated with the research methods course; process statements about the session/interview; and also statements that were straight repetitions of what had already been stated.

The next step was to evaluate the extent each statement was apparently a representation of either extrinsic, various or intrinsic experience of relevance.

Examination of the students' statements indicated that within each of the three levels of experience that I had identified there were different types of statements.

For both extrinsic and intrinsic levels it was possible to differentiate between general and specific statements. The extrinsic general or specific statements could be further sub-divided according to whose perspective the student seemed to be taking into account; their own or another person's, usually the lecturer's.

It was, therefore, possible to place extrinsic statements in one of the following four categories:

1) Extrinsic; other person's perspective, general
2) Extrinsic; other person's perspective, specific
3) Extrinsic; student's own perspective, general
4) Extrinsic; student's own perspective, specific

Statements in categories 1 and 2 indicated the content was being regarded from the point of view of a) achieving some external demand and b) how the student thought the other person (e.g. the lecturer) would expect or want this result achieved.

In the general case the students were simply recognising the material's potential usefulness without relating it to any specific extrinsic demand. For example:
"You expect what the lecturer writes on the board to be the important things, so whatever you write you get that down."

In the specific case the students were actively considering how, where or which extrinsic demand the material might assist them to fulfil. For example:

"Actually, I found it was quite useful when we were doing that questionnaire (an assessment exercise) thing, you know, in the lecture, because there were certain points that she wrote down which you wouldn't normally think of because you think they are blatantly obvious. But it's quite important to write them down."

Statements in categories 3 and 4, like those in 1 and 2, referred to the content in terms of achieving some external demand but, this time, from the perspective of how the students saw themselves achieving the demand and recognising the material's potential in assisting them.

In the general case it was a matter of straight recognition of the materials potential usefulness without exact consideration of how. For example:

"I just note things I'm listening to, understand and anything I think is relevant to the homework we're doing."

In the specific case the students were actively aware of how, where or which extrinsic demands the content might help them with. For example:

"Well, when I clicked on to it being experimental design - the next piece of work is on that - we have to design something, design a piece of research work, and I kept all the way through - I kept asking how am I going to use this in my work."

Both the vicarious and intrinsic levels of experience had two categories.

Vicarious experience of relevance were:

(5) Vicarious; perceived

(6) Vicarious; illustrative
Statements in category 5 were those that referred to perceived lecturer's interest and enthusiasm for the material which was apparently transferred to the student. In fact, examples of this category tended to be of a negative nature, the student dismissing something simply because they felt the lecturer had dismissed it. For example:

"I don't think she was convinced by the methodology either. She was laughing and seemed more relaxed. I think it was just additional material that she was giving us."

Statements in category 6 seemed to indicate that the lecturer had succeeded in providing the student with an illustration, description of experience, etc., that the student could identify with and find interesting irrespective of whether or not they could relate to the issue being put across or illustrated. For example:

"It was interesting wasn't it? Interesting to see what - just the information - her explaining her work in another country, what the attitudes are like. It was interesting."

The two intrinsic experience of relevance categories were:

(7) Intrinsic; general
(8) Intrinsic; specific

In the general case the students were recognising the material had some sort of meaning and reality to their way of thinking. At the same time, however, they did not seem to consider actively the exact implications of the information to their reality. For example:

"I understand it and I found the content interesting, so I didn't stray, my mind didn't wander."

In the specific case the students were actively relating the content to their own understanding and framework of thinking during the lecture. For example:
"I can imagine that sort of situation ... it's very vivid, I mean quite vivid description. I think I had two thoughts: Yes, it does happen in the hospital situation where they tend, because staff just forget this person, ummm, that it's this person's private life - it becomes part of their form filling. And my other thought was: I don't think it ever happened where I worked."

4.5 Analysis of Students' Stimulated Recall Sessions and Interviews

Having established these eight categories the next step was to categorise each of the students' statements. I numbered each statement and put them in random order, keeping a separate record of which statement belonged to which student. This procedure increased the probability of each statement being considered independently and not on the basis of how previous statements made by the same student had been categorised.

The statements were analysed in two batches. In the first were those from the recall sessions and interviews that were transcribed in full. I did not transcribe in full students' second recall sessions but took the relevant statements direct from the tape. These statements constituted the second batch.

There were 146 statements from the transcribed interview and recall sessions and 123 from the taped only recall sessions.

After categorising the first batch myself I asked two other people independently to categorise them. The only guidance I gave these independent judges was a list and description of the eight categories (see appendix B.)

The three of us categorised only 18 statements (12%) completely differently from one another. For a further 64 statements (44%) however agreement was only partial, in that one person differed to the other two. Complete agreement between all three was obtained for the remaining 64 statements (44%).
I then met with the other two judges to discuss the first 24 of the 82 statements where there had been either total (18) or partial (64) disagreement. After this meeting we each went away and again independently categorised the remaining 'disagreement' statements.

This second categorisation of statements resulted in 82% total or complete agreement and left 26 statements where we still all differed, or one judge differed to the other two. After further discussion we reduced the statements where there was still disagreement to 4; giving 97% agreement.

4.6 Problems in Categorising Statements

From the point of view of both clarifying and developing the 8 categories it is interesting to look at where there were disagreements between one judge and the other two. I have not attempted to examine those disagreements where all the judges disagreed with each other as it is too difficult to identify any consistent pattern among the 'total' disagreements.

The majority of the 64 'partial' disagreements were among categories within one of the three levels (extrinsic, vicarious, intrinsic) of experience of relevance: That is the disagreements were over types of extrinsic experience, or types of intrinsic experience and not over extrinsic versus intrinsic etc. The main areas of disagreement were as follows:

- Intrinsic; general v Intrinsic; specific - 16 disagreements
- Extrinsic; general, other person v Extrinsic; specific, other person - 9 disagreements
- Extrinsic; general, own perspective v Extrinsic; specific, own perspective - 8 disagreements
- Vicarious; perceived v Vicarious, illustrative - 4 disagreements
Only 28 disagreements occurred between the 3 different levels of experience. The most common differences (10 disagreements) between the vicarious and intrinsic levels of experience:

- Vicarious; illustrative v Intrinsic; specific - 6 disagreements
- Vicarious; illustrative v Intrinsic; general - 4 disagreements

In the two meetings between the other two judges and myself we tried to establish the reasons for the differences of judgement. One of the main difficulties in separating specific and general categories was felt to be with statements where a singular instance led to a general conclusion: the following statements illustrates the difficulty:

"Yeh, I hadn't thought about it (participant observation) before and, yeh, then I thought, well if you can use different methods then it's probably - yeh, I think I'd quite like that from many angles - from the actual scientific research angle it seemed much better and also from the point of view of having to do it."

It was agreed that such a statement should be designated intrinsic specific because the student was going beyond recognition to thinking actively of the implications to both her view of scientific research and the prospect of using the methodology herself.

We also discussed the question of when does vicarious experience, associated with an illustrative example, become intrinsic experience of relevance. Take, for example, the following statement:

"She goes on to give the categories of non-response and she says the uninterviewable are the first category, including those people who are ill or are deaf and I thought, well, it's the same thing really."

The other two judges, without seeing any further evidence of how the student thought about the lecturer's illustration, felt this should be categorised as vicarious illustrative. However the transcript just before that statement reads:
"It was non-response, I thought, oh that's not very difficult we've done the problems of non-response before ........."

And after the statement, the transcript continued:

Interviewer: "What, being ill and deaf?"

Student: "Yeh, ill and deaf, I suppose, no, it's not really. You can be deaf and not ill."

In this instance there was no other resolution to our differences than to know more of the context of the statement. When the other two judges read these additional extracts from the transcript they both agreed that the statement was intrinsic specific rather than vicarious. The difficulties do, however, emphasise the delicate boundary between vicarious and intrinsic experience: Possibly, 'good' vicarious experience leads inevitably to intrinsic experience of relevance.

The other area of difficulty was in deciding between extrinsic general, other person's perspective and extrinsic general, student's own perspective. I am not altogether clear why this was the case. When we discussed the relevant statements, the 'odd-man' out would invariably agree with the other two without further debate.

4.7 Analysis of Taped Stimulated Recall Sessions

The research methods students' statements taken from tapes were categorised by the same two judges and myself. A slightly different procedure was followed, however.

I had intended that all three of us should see the statements where there was disagreement over. We could each then reconsider our original categorization. But, due to the large time commitment involved, only one of the other two judges agreed to reconsider his categorisation.
In the first categorisation there was total agreement between the three of us over 47 of the 123 statements (38%). There was thus 62% disagreement. There was total disagreement between us, however, on only nine statements (7%). In 40% of the 'disagreed' cases the judge who felt unable to reconsider his categorising disagreed with the other two judges, who were in agreement. In 46% of the 'disagreed' cases the other judge or myself was in the minority situation.

The rest of the analysis concerned only myself and the judge who was prepared to reconsider his categorisation. He and I disagreed on 34 statements, thus we were in complete agreement for the remaining 87. After reconsideration this increased to 115 (94%). This was without discussion or knowledge of each other's categorisations: He never knew mine and I could no longer remember his.

As with the first batch of statements, much of the initial disagreement between all 3 judges occurred within one of the three levels of experience rather than between levels. 14 of the disagreements were within the extrinsic categories, and of these the largest number were between the categories:

Extrinsic; general, own perspective \textit{v} Extrinsic; specific, own perspective - 8 disagreements

The disagreements within the other two levels were:

Intrinsic; general \textit{v} Intrinsic; specific - 9 disagreements
Vicarious; perceived \textit{v} Vicarious; illustrative - 2 disagreements

The main disagreements between the 3 different levels of experience were again between the vicarious and intrinsic levels. These were as follows:

Vicarious; illustrative \textit{v} Intrinsic; specific - 15 disagreements
Vicarious; illustrative \textit{v} Intrinsic; general - 3 disagreements
Vicarious; perceived \textit{v} Intrinsic; specific - 2 disagreements
Also however there were:

Extrinsic; specific, own perspective v Intrinsic; specific - 10 disagreements.

(The remaining disagreements were 8 single instances cf between category disagreements and the nine 'total' disagreements).

Thus the pattern of disagreements in the analysis of the second batch of statements was similar to that for the first batch. The exception being the last ten disagreements noted above between Extrinsic specific, own perspective and Intrinsic specific.

4.8 Results of the Analysis

Different students, not surprisingly, made a different number of statements in their interviews or recall sessions. It is possible, however, to compare the proportion of each student's total statements falling in each of the three levels and each of the 8 categories.

Table 4.4 shows the percentage of a student's statements falling in each of the eight categories. The table also shows the date of the recall session or interview. All the interviews and the asterisked recall sessions were transcribed.

Table 4.5 groups together the statements into the 3 levels. The table confirms that the home economics students did tend to experience the relevance of the lectures extrinsically; this was particularly the case for lectures held earlier in the term. For all but one of them (5 HO. Econ.) the proportion of extrinsic statements declined for later lectures. This would support the idea that background knowledge and familiarity with the subject area is important. The second stimulated recall sessions were all near the end of the lecture course when all but one of the assessment exercises had been completed and
Table 4.4.  Percentage of Total Statements in Each Category

<table>
<thead>
<tr>
<th>Student of Lecture</th>
<th>Percentage of total statements in each category</th>
<th>Total No. Statements per Stud</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1 H. Sci. 9/12</td>
<td>-</td>
<td>6.7</td>
</tr>
<tr>
<td>#4/2 26.6</td>
<td>4.8</td>
<td>9.5</td>
</tr>
<tr>
<td>2 H. Sci. 24/2</td>
<td>4.5</td>
<td>4.5</td>
</tr>
<tr>
<td>12/3</td>
<td>5.0</td>
<td>5.0</td>
</tr>
<tr>
<td>3 H. Sci. 21/1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>#17/2 5.9</td>
<td>5.9</td>
<td>-</td>
</tr>
<tr>
<td>4 H. Sci. 21/1</td>
<td>9.1</td>
<td>-</td>
</tr>
<tr>
<td>11/3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5 H. Sci. 9/12</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1 ESS *Interview 26/4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2 ESS *4/2 9.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4/3 6.7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3 ESS *Interview 21/4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4 ESS *17/2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1 Ho. Econ. *Interview 29/4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2 Ho. Econ. *18/2 27.3</td>
<td>-</td>
<td>45.5</td>
</tr>
<tr>
<td>11/3</td>
<td>-</td>
<td>33.3</td>
</tr>
<tr>
<td>3 Ho. Econ. *18/2 10.0</td>
<td>-</td>
<td>10.0</td>
</tr>
<tr>
<td>11/3</td>
<td>-</td>
<td>8.3</td>
</tr>
<tr>
<td>4 Ho. Econ. *21/1 25.0</td>
<td>-</td>
<td>37.5</td>
</tr>
<tr>
<td>4/3 12.5</td>
<td>-</td>
<td>37.5</td>
</tr>
<tr>
<td>5 Ho. Econ. *4/1 5.6</td>
<td>-</td>
<td>5.6</td>
</tr>
<tr>
<td>*10/3 15.4</td>
<td>-</td>
<td>23.1</td>
</tr>
</tbody>
</table>

* Transcribed interview sessions.
Table 4.5 Percentage of Student Statements Occurring in the Three Main Levels of Experience.

<table>
<thead>
<tr>
<th>Student</th>
<th>Date of Lecture</th>
<th>Extrinsic Levels 1 - 4</th>
<th>Vicarious Levels 5 and 6</th>
<th>Intrinsic Levels 7 and 8</th>
<th>Total Number of Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 H. Sci.</td>
<td>9/12</td>
<td>13.4</td>
<td>59.7</td>
<td>26</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>*4/12</td>
<td>57.2</td>
<td>23.8</td>
<td>23.8</td>
<td>21</td>
</tr>
<tr>
<td>2 H. Sci.</td>
<td>*24/2</td>
<td>27.2</td>
<td>36.1</td>
<td>36.3</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>12/5</td>
<td>50.0</td>
<td>20.0</td>
<td>30.0</td>
<td>20</td>
</tr>
<tr>
<td>3 H. Sci.</td>
<td>21/1</td>
<td>26.0</td>
<td>-</td>
<td>73.4</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>*17/2</td>
<td>11.8</td>
<td>-</td>
<td>88.3</td>
<td>17</td>
</tr>
<tr>
<td>4 H. Sci.</td>
<td>*21/1</td>
<td>18.2</td>
<td>9.1</td>
<td>72.7</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>11/3</td>
<td>-</td>
<td>11.1</td>
<td>88.9</td>
<td>9</td>
</tr>
<tr>
<td>5 H. Sci.</td>
<td>*9/12</td>
<td>-</td>
<td>14.3</td>
<td>85.7</td>
<td>7</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>22.6</td>
<td>19.3</td>
<td>58.3</td>
<td></td>
</tr>
<tr>
<td>1 ESS</td>
<td>*Interview 26/4</td>
<td>50</td>
<td>50</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>2 ESS</td>
<td>*4/2</td>
<td>18.2</td>
<td>9.1</td>
<td>72.7</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>4/3</td>
<td>6.7</td>
<td>20.0</td>
<td>73.3</td>
<td>15</td>
</tr>
<tr>
<td>3 ESS</td>
<td>*Interview 21/4</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>4 ESS</td>
<td>*17/2</td>
<td>20</td>
<td>60</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>39.0</td>
<td>27.8</td>
<td>33.2</td>
<td></td>
</tr>
<tr>
<td>1 Ho. Econ.</td>
<td>*Interview 29/4</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>2 Ho. Econ.</td>
<td>*18/2</td>
<td>81.9</td>
<td>9.1</td>
<td>9.1</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>11/3</td>
<td>44.4</td>
<td>22.2</td>
<td>33.3</td>
<td>9</td>
</tr>
<tr>
<td>3 Ho. Econ.</td>
<td>*18/2</td>
<td>20.0</td>
<td>50.0</td>
<td>30.0</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>11/3</td>
<td>16.6</td>
<td>16.7</td>
<td>66.6</td>
<td>20</td>
</tr>
<tr>
<td>4 Ho. Econ.</td>
<td>*21/1</td>
<td>75.0</td>
<td>12.5</td>
<td>12.5</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>4/3</td>
<td>50.0</td>
<td>25.0</td>
<td>25.0</td>
<td>8</td>
</tr>
<tr>
<td>5 Ho. Econ.</td>
<td>4/1</td>
<td>16.8</td>
<td>16.7</td>
<td>66.7</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>*10/3</td>
<td>46.2</td>
<td>15.4</td>
<td>37.7</td>
<td>13</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>50.1</td>
<td>18.73</td>
<td>31.2</td>
<td></td>
</tr>
</tbody>
</table>

* Transcribed interview or session
there had been the opportunity for discussing these, the lectures and other aspects of the course. One would, therefore, assume that the students had a greater background knowledge at this stage of the course, even if it was achieved through the necessity of fulfilling assessment demands.

An interesting point can be made about students whose statements reflected relatively high vicarious experience in the earlier lectures. They seemed to represent some sort of transitional position between the extrinsic and intrinsic levels. For, in later lectures, those students moved either to more intrinsic experience of relevance (for example, 3 Ho. Econ.) or more extrinsic experience (for example, 1 H.Sci. and 2 H.Sci.)

In general, those people who in the later lectures showed increased vicarious experience of relevance also showed more intrinsic experience (for example, 2 Ho. Econ, 4 Ho.Econ).

In only one case (5 Ho. Econ) did a student show, in their statements, a marked move from relatively high intrinsic experiencing to more extrinsic. The results confirm that human science students 3 H.Sci., 4H.Sci, and 5 H.Sci all tended to experience the relevance of the lectures intrinsically. The relatively high intrinsic experiencing shown by 2 ESS was, perhaps, not quite what I expected. He had revealed himself as being assessment orientated in his approach towards his degree and as considering the research method course as a low priority one for him. He did, however, seem to have a quite significant knowledge of the subject which, presumably, allowed him, none-the-less, to experience the relevance of the lectures intrinsically.

Table 4.4 shows the extrinsic experiencing among the home economics students tended to be predominantly general as opposed to specific.
This seems to indicate a constant general awareness of assessment irrespective of present demands and needs. 3 Ho. Econ is the possible exception.

The same can not be said for the extrinsic human science students 1 H.Sci and 2 H.Sci: their extrinsic experiencing was more spread across general and specific. It is, however, the case for the extrinsic students 1 ESS and 3 ESS. Infact, as one might expect, statements of students who did not attend the lectures tended to be extrinsic general, own perspective (1 ESS and 3 ESS and 1 Ho. Econ.)

Where home economics students did experience relevance intrinsically it was invariably at a 'specific' level. This seems to indicate favourable response to and appreciation of particular 'bits' only. The greater amount of general as well as specific intrinsic experience of the intrinsic students, 3 H.Sci, 4 H.Sci, 5 H.Sci and 2 ESS might indicate an ongoing interest and attention interspersed with specific responses and appreciation of particular 'bits'.

Table 4.4 shows that where these last students did make extrinsic level statements they tended to be specific, own perspective statements. This seems to indicate an active awareness of specific assessment demands as opposed to the ongoing more passive awareness of assessment of the home economics students which I mentioned above.

4.9 Relation of Students' Experience of Relevance to General Orientation.

The results shown in tables 4.4 and 4.5 and discussed above for the most part support earlier descriptions (section 4.3) of students general orientation to the research methods course.
For example, one student (1 H.Sci) is described in the earlier section as having an essentially assessment orientation: he was more able, however, to relate the lecture content to 'real life situations' when the lecturer used examples. This description would seem to be at one with the relatively high proportion of extrinsic and vicarious statements which he made.

In the earlier section 2 H.Sci was described as having a less strong assessment orientation. This came out much more strongly in the later figures. Her tendency to see the relevance through the lecturer's examples or own interest and enthusiasm was confirmed by the number of vicarious statements she made.

The tendency of 3 H.Sci, 4 H.Sci and 5 H.Sci to experience the content in a way meaningful to themselves is confirmed in their intrinsic scores. At the same time their extrinsic scores confirm that this was not without due account being paid to assessment requirements (except apparently 5 H.Sci). As just discussed, the assessment orientation of 2 ESS towards his degree is not reflected in the figures: instead they reflect his ability to experience the content in a way meaningful to himself, his framework of thinking and, possibly most important, his existing knowledge.

The described assessment orientation of 3 ESS and her tendency to relate to the examples of the lecturer was, again, confirmed. That she had a relatively low intrinsic score possibly supports the notion that she related to the examples in a way that was isolated to the rest of the lecture content.

The assessment orientation and consequent non-attendance of lectures are reflected in the extrinsic scores of 1 ESS and 3 ESS. Possibly the lower extrinsic and higher vicarious score of 1 ESS results from his tendency to be able to see the relevance to himself of doing the subject.
I said earlier, the results confirmed, particularly for the earlier lectures, the home economics students' assessment orientation. 3 Ho. Econ and 5 Ho. Econ, who I described in the orientation section as claiming that the lecturer's examples had helped them to see the relevance of the lectures better, had the highest intrinsic scores; in addition, 3 Ho. Econ had the highest vicarious score.

I also said that none of the home economics students indicated that they experienced the content as relevant as a result of the lecturer's interest or enthusiasm. This is supported in Table 4.4, where there is an absence of vicarious; perceived statements for all but two home economics students (3 Ho. Econ and 4 Ho. Econ.)

4.10 Group Similarities and Differences

The extent to which the students, as subject groups (human science, ESS and home economics), experienced in any definitive way the relevance of the content differently did not really emerge. What can be said is that the human science students demonstrated a greater tendency to experience relevance intrinsically. Similarly, the home economics students showed a greater tendency to experience relevance extrinsically. They seemed, however, to move from this level during the course of the year. (The extent to which this is reflected in their approach to the lectures will be discussed in Chapter 8.)

The ESS students were more diverse, possibly representing their half-way position between human science and home economics. They included students who experienced relevance predominantly extrinsically, vicariously and intrinsically.
The general questionnaire results (described in section 4.2) provide no contradictions but add little in the way of explanations of the different ways the students experienced relevance. There is, however, an indication that the predominate ideas identified by the questionnaire for each group are, to some extent, reflected in the individual student's way or ability to experience relevance. For example, the favourable response of human science students to the inclusion of research studies might be expected of more highly intrinsic students (which they were). Similarly, the home economics students unfavourable response to the use of sociology terminology might have some correlation with their tendency to an extrinsic experience of relevance. Lastly, the ESS students discussed above did, in common with their peers who responded to the questionnaire, have a relatively low appreciation of the relevance of the research methods course to them.

4.11 Conclusions

A number of tentative conclusions can be drawn from the research method case study. Individual students experience the relevance of the lecture content differently; and the eight categories describing the 3 levels of experience of relevance (identified from the data) were appropriate for discriminating between the students. That there were certain similarities in the way the students from each of the three groups experienced the relevance of the content would suggest that the teaching and learning context did have a bearing upon their experience of relevance.
The fact that the home economics students, particularly for the earlier lectures, tended to experience relevance extrinsically offers support for the importance of background knowledge and familiarity with the subject to experiencing intrinsically. Thus the human science students, who were the most 'au fait' with the subject, tended to experience relevance intrinsically.

The examples of vicarious experience which I identified suggest one way that the lecturer can affect the way his/her students experience the relevance of the content. There was some evidence suggesting that students can move from relatively high vicarious to greater intrinsic experiencing. Interestingly enough, students who experienced the relevance of the content predominantly intrinsically generally did so without losing sight of the extrinsic demands upon them.

I shall refer to these conclusions again in the following two Chapters, and discuss them in more detail in Chapter 7 in the context of the other case studies.
CHAPTER FIVE

CASE STUDY 2 : THE FOOD, WATER AND DIARY MICROBIOLOGY COURSE
CHAPTER 5: CASE STUDY 2: THE FOOD, WATER AND DAIRY MICROBIOLOGY COURSE.

5.0 Introduction and Background

This chapter describes the second of my three case studies, which looked into the students' experience of lectures in a Food, Water and Dairy Microbiology course.

In my investigation of the research methods course I came to the tentative conclusion that the teaching and learning context had some bearing upon student experience of the relevance of lecture content. Here, in the second case study, I examine further this issue, together with the influence of background knowledge and the influence of the lecturer.

I shall also examine the difference among individual students' experience of lecture relevance and whether the eight categories of experience, which I identified in the previous study, are able to discriminate between students here.

There were a number of important contrasts between the food, water and dairy microbiology course and the research methods course: the microbiology course was a final-year course, which 17 students only were taking as one of their two final year options, and all the students belonged to the same department. (During the first term there was also one second-year nutrition student. I excluded this student from the study as she was not attending the full course).

These features meant that the teaching and learning context of the course was, unlike the research methods course, essentially the same for all the students. Belonging, as they did, to the same department, they were exposed to the same "network or nexus of cultural, social, institutional and psychological variables" in existence in the department.
(Parlett and Hamilton, op. cit.) As they were final-year students one would expect them to be both fully immersed in the departmental ethos and culture and to possess adequate background knowledge and familiarity in the subject.

On the food, water and dairy microbiology course I studied students' experience of the lectures given by one of 3 lecturers involved with the course. She had the heaviest work load, lecturing for weeks 1 - 6 and week 11 of the first term (on dairy and milk microbiology.), and weeks 1 - 3 of the second term (on meat and fish). There were two lectures per week, on Tuesdays at 9.00 a.m. and Fridays at 10.00 a.m. and during the other weeks of the two-term course these lectures were given by other microbiology lecturers. In the second term one of the six lectures in weeks 1 - 3 was in fact given by a visiting lecturer and one was cancelled.

The Friday lecture was followed by a laboratory class running from 11.00 a.m. - 1.00 p.m. According to the case study lecturer, these classes included the tutorial element of the course.

Assessment was part course-work (40%) and part examination at finals (60%). The 40% course assessment was allocated as follows:

<table>
<thead>
<tr>
<th>Assessment Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project practical seminar</td>
<td>10%</td>
</tr>
<tr>
<td>Essay or Test</td>
<td>10%</td>
</tr>
<tr>
<td>Lab. work/Note book</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>40%</td>
</tr>
</tbody>
</table>

The extent to which the pressure of finals encouraged an extrinsic experience of relevance amongst these students will be discussed later.

5.1 Choice of Students

As in the first study, I chose the students whose approach and experience I wanted to study in greater depth by means of the key
factor questionnaire. To recall the aim of the questionnaire; it was to help me identify students who thought that inter-personal qualities of the lecturer (e.g. whether or not the lecturer had good student-lecturer rapport) influenced their opinion of the lectures more than impersonal perceptions. (e.g. whether or not the lecturer had a wide knowledge of the subject).

According to the results, the students were, overall, not very influenced by personal aspects of the lecturer. Only four students had a score indicating that they felt themselves more influenced by personal than impersonal perceptions.

I selected the two students who, according to their key-factor scores, were most influenced by personal factors (1 MB, 2MB), three who were least (5 MB, 6 MB, 7 MB) and two, chosen at random, with a mid-range score (3 MB, 4MB).

I also selected an eighth student (8 MB) who had not completed the key-factor questionnaire. Three students, in fact, did not complete the questionnaire and I thought it necessary to have a representative of these in my study. Both he and another student had not been present when I handed out the questionnaire; and the third decided to drop out of the course for an alternative option (there had originally been 18 due to take the food, water and dairy option).

Table 5.1 lists the students selected, their other option, their final position in the food, water and dairy option and their final degree result.

All eight students consented to do stimulated recall sessions of lectures and complete a repertory grid. As with the research methods course, I spent most of the autumn term orientating myself and observing the lecturing style of the lecturer. Again, the majority of the stimulated recalls were done in the spring term. Unfortunately, one
I asked the microbiology students to complete only a short questionnaire on their perceptions of the lecturer. This was because I had been able to talk to most of them during the course and they were fairly homogeneous in their views.

The questionnaire was the general questionnaire that David McConnell and I had developed using the Repertory Grid. The students were asked to respond on a 1 - 5 point scale to 19 factors concerning lecturers and lectures that we had earlier found to be considered important by students. I sent a copy of the questionnaire to the microbiology students with a covering letter. Sixteen of the seventeen students (94%) returned their questionnaires. The results are summarised in Table 5.1. They

<table>
<thead>
<tr>
<th>Student</th>
<th>Other Option</th>
<th>Final Degree</th>
<th>Position in Class of 17 for food option</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 MB</td>
<td>Bacteriology</td>
<td>2B</td>
<td>10</td>
</tr>
<tr>
<td>2 MB</td>
<td>Soil</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>3 MB</td>
<td>Bacteriology</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>4 MB</td>
<td>Industrial</td>
<td>2A</td>
<td>4</td>
</tr>
<tr>
<td>5 MB</td>
<td>Virology</td>
<td>2A</td>
<td>5</td>
</tr>
<tr>
<td>6 MB</td>
<td>Bacteriology</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>7 MB</td>
<td>Bacteriology</td>
<td>2A</td>
<td>12</td>
</tr>
<tr>
<td>8 MB</td>
<td>Bacteriology</td>
<td>2B</td>
<td>14</td>
</tr>
</tbody>
</table>

5.2 The Course Questionnaire

I asked the microbiology students to complete only a short questionnaire on their perceptions of the lecturer. This was because I had been able to talk to most of them during the course and they were fairly homogeneous in their views.

The questionnaire was the general questionnaire that David McConnell and I had developed using the Repertory Grid. The students were asked to respond on a 1 - 5 point scale to 19 factors concerning lecturers and lectures that we had earlier found to be considered important by students. I sent a copy of the questionnaire to the microbiology students with a covering letter. Sixteen of the seventeen students (94%) returned their questionnaires. The results are summarised in Table 5.1. They
Table 5.2.

PLEASE RING THE RESPONSE YOU THINK IS MOST APPROPRIATE WITH RESPECT TO YOUR OPINIONS AND VIEWS OF THE LECTURES GIVEN TO YOU BY MRS. M

II: OPTION 6.

<table>
<thead>
<tr>
<th>The Lecturer:</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Encourages student participation in lectures</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.4</td>
</tr>
<tr>
<td>2. Allows opportunities for asking questions</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.1</td>
</tr>
<tr>
<td>3. Has a good lecture delivery</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.6</td>
</tr>
<tr>
<td>4. Has a good rapport with students</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>4.3</td>
</tr>
<tr>
<td>5. Is approachable and friendly with students</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>4.7</td>
</tr>
<tr>
<td>6. Is respectful towards students</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>4.1</td>
</tr>
<tr>
<td>7. Is able to reach student level</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
</tr>
<tr>
<td>8. Enables easy note taking</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.0</td>
</tr>
<tr>
<td>9. Provides useful printed notes *</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>10. Would help students by providing printed notes *</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.5</td>
</tr>
<tr>
<td>11. Has a good knowledge of his subject</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>4.1</td>
</tr>
<tr>
<td>12. Maintains student interest during lectures</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.4</td>
</tr>
<tr>
<td>13. Gives varied, lively lectures</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.2</td>
</tr>
<tr>
<td>14. Is clear and comprehensible in lectures</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
</tr>
<tr>
<td>15. Gives lectures which are too fast to take in</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td>16. Gives audible lectures</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>4.1</td>
</tr>
<tr>
<td>17. Gives structured, organised lectures</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.5</td>
</tr>
<tr>
<td>18. Appears to be enthusiastic for his subject</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>4.5</td>
</tr>
</tbody>
</table>

Name: 

* Please answer if applicable

Thank You
Vidien Hodgson  I.E.T.
show that the students were essentially positive in their opinion of the lecturer and her lectures, particularly with regard to the more 'personal' questions. Question 4 (good rapport with students) and question 6 (approachable and friendly with students) are good examples of this. Other questions which elicited high positive responses are 10 (Appears to be enthusiastic for her subject), and 12 (Has a wide knowledge of her subject).

Thus, the questionnaire results indicated that the students, as a group, were positively predisposed towards the lecturer and her lectures; and that their experience of the teaching and learning context were both similar and positive.

5.3 Students' Orientation Towards the Course

The foregoing description and discussion of the teaching and learning context of the microbiology course provides sufficient evidence to make the following assumptions:

1) The teaching and learning context was essentially the same, or very similar, for all the students; and

2) All the students had an existing background knowledge and familiarity with the subject.

Accepting these assumptions, it is interesting to examine whether there were differences among the individual students' experience of the relevance of lectures and to what extent the eight categories (identified in Chapter 4) discriminated between students.

In order to gain an initial indication of the existence and nature of differences, I again carried out a preliminary analysis of the stimulated recall sessions.

As in Chapter 4, the students had responded to the lecture extracts that I played them both by describing what they had done and/or thought
at the time of the extract and by explaining why they thought they had

done so in the way they had. I found that the students' statements were,
generally, about the same concerns, ideas etc., that the research
method students' statements had been and most of them fell into the
same six broad areas of concern.

These were:

(1) Background experience
(2) Assessment
(3) Personal relationships (and perceptions)
(4) Presentation
(5) Work and Study habits
(6) Relevance and interest

Using these categories as an initial framework I was able to
extract the following descriptions of the students' general orientation
towards the microbiology course and thus determine that differences
between students did exist.

1 MB was constantly aware of assessment in her approach to the
course. She worked in the lectures on the principle, 'however irrelevant,
it goes down'. But she did, on occasion, relate the content of
lectures to the content of her other option course and also to what
she had either seen on television or read about elsewhere. She thus
illustrated, through an existing familiarity and knowledge of the subject,
some tendency to relate the content to her own framework of knowledge
and thinking.

3 MB and 8 MB similarly were primarily assessment-orientated.
They were, however, positively able to perceive the interest and
relevance of the subject. 3 MB commented, for example, that the
subject was one which he could readily identify with. In addition,
both commented on the lecturer's concern to relate the content to
'everyday things'. Yet, as 8 MB added, "everything is superficial if
not for exams."
Neither 2 MB or 5 MB were assessment-oriented. They both seemed frequently to relate the content to their own everyday experience. They, as 3 and 8 MB, thought the lecturer presented the subject in a way which brought out its relationship to everyday events. This enabled them to relate it to their own everyday experience and to understand it more readily. On the other hand, neither seemed very often to relate the content to any existing academic knowledge and experience of the subject.

4 MB, 6 MB and 7 MB did relate the content to both their own everyday experience and their existing academic knowledge. 4 MB and 6 MB reported that they were helped in this by the lecturer's presentation of the subject. Like the intrinsic research method (3 H.Sci, 4 H.Sci and 5 H.Sci) they were not unmindful of assessment. All three had, for the purposes of note-taking, an active critical awareness of what material was necessary for their understanding of the subject and what was hopefully relevant for exam purposes.

The preliminary analysis suggests, therefore, that there were individual differences between the students in their general orientation towards the microbiology course. It also seems probable that, like the research method students, they were likely to experience the relevance of the lecture content in one of three ways: through

1) assessment
2) the lecturer
3) own understanding, knowledge and interest.

If this were the case, the eight categories of experience of relevance would discriminate between the microbiology students, indicating how far each experienced the relevance of the content extrinsically, vicariously or intrinsically.

The preliminary analysis suggested that this categorisation might be insufficient: that there might be two, qualitatively different, kinds
of intrinsic experience. The first was associated with practical everyday experience (as it seemed to be for 2 MB and 5 MB); the second was associated with practical everyday experience and academic experience (See 4 MB, 6 MB and 7 MB). Whilst the two intrinsic experience of relevance categories (merely 'general' and 'specific') could not distinguish between these qualitatively different types of experience of relevance it was still possible that the category system as a whole would show the distinction. If it did not, then it would reflect an important weakness in the system.

Interwoven within all five of these students' descriptions there was also some vicarious type experience: it was possible, therefore, that the vicarious categories would differentiate between them.

5.4 Students' experience of Relevance of the Lecture Content

As in the first case study, it was necessary to extract from the transcripts and tapes of the stimulated recall sessions each statement that gave the slightest indication of the students' experience of the relevance of the lecture content. Thus I extracted all statements that (1) described, explained or discussed the students response to any part of the lecture, (2) referred either directly or indirectly to influences upon approach or response to the lectures or the specific extract, and (3) referred to the lecturer and her presentation. As before, I excluded statements that were essentially background information about self, not associated with the microbiology course, process statements about the session and also statements that were straight repeats of what had already been stated.

The next step was to categorise each statement in one of the eight categories describing the three levels of experience:
1) Extrinsic; other person's perspective, general
2) Extrinsic; other person's perspective, specific
3) Extrinsic; student's own perspective, general
4) Extrinsic; student's own perspective, specific
5) Vicarious; perceived
6) Vicarious; illustrative
7) Intrinsic; general
8) Intrinsic; specific

The statements, as previously, were numbered and put in random order. Again they were analysed in two lots, those taken direct from the tapes of the sessions and those from fully transcribed sessions.

5.4.1. Statements from the taped only sessions

The analysis of these statements was carried out in the same way as in the research method case study, except that there was only one judge besides myself. She was given a list of the eight categories with descriptions and examples. I also gave her a written note to facilitate the categorisation of statements in areas where there had been previous difficulties about, for example, the difference between general and specific categories and between vicarious and intrinsic experience. (See appendix B).

We differed in our initial categorisation on 32 of the 112 statements (29%) and decided one statement was inappropriate as a reflection of experience of relevance. I now re-checked my categorisation, changing 21 statements: the amount of disagreement between us thus dropped to only 11 statements (10%). The other judge then re-checked her categorisation of those 11 statements and changed 8. As a consequence we finally disagreed on 3 statements (3%).

Problems in Categorising Statements

There were fewer disagreements than in the first categorisation attempt of the research method statements and a high final agreement.
I assume this was due to the insightfulness of the microbiology judge but also the extra information that I gave her on areas of difficulties.

The summary below outlines where most disagreement occurred.

**Total disagreement on 1st attempt**  
22

<table>
<thead>
<tr>
<th>Intrinsic categories v vicarious categories</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic; specific v vicarious; illustrative</td>
<td>7</td>
</tr>
<tr>
<td>Intrinsic; general v vicarious; illustrative</td>
<td>3</td>
</tr>
<tr>
<td>Intrinsic; specific v vicarious; perceived</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12</td>
</tr>
</tbody>
</table>

| General v Specific categories: |
| Intrinsic; general v intrinsic; specific | 4   |
| Extrinsic; general own P. v Extrinsic; specific own P | 2   |
| **Total**                          | 6   |

There were another 4 disagreements between intrinsic general and extrinsic general, other person's perspective, and the remaining 10 were all single - instance differences.

Thus, as in the first case study, there were difficulties in differentiating, in particular, between intrinsic and vicarious experience; and also between the general and specific categories of both extrinsic and intrinsic experience. The intrinsic/vicarious difficulty was confirmed by the disagreements remaining after, first, I had re-checked my categorisation and, second, after the other judge had re-checked hers.

**Total disagreement after my recheck** 11

<table>
<thead>
<tr>
<th>Intrinsic v vicarious categories</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic; specific v vicarious; illustrative</td>
<td>5</td>
</tr>
<tr>
<td>Intrinsic; specific v vicarious; perceived</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7</td>
</tr>
</tbody>
</table>

**Final Total Disagreements** 3

All: Intrinsic specific v vicarious illustrative
These disagreements were, I think, particularly interesting. My expectation, before carrying out the analysis, was that this lecture would facilitate a high level of vicarious experience in her students as she invariably — from my experience of her lectures — related the points she wanted to make to vivid and easily identifiable descriptions. She seemed to do this as part of a conscious strategy to bring her material to life.

Thus note the difference between her lecture notes and her lecture as given:

1) From lecture notes: "Commercial process; that they are loaded on the deck of the fishing vessel, may be tumbled, gutted and often contaminated with bacteria."

2) What lecturer said: "I'm sure you have seen pictures on television and things of what happens to the poor old fish, they are tumbled on deck, they are trodden on, they are handled, they are gutted, and they are washed and all these operations add enormous other organisms to them."

That she herself saw a particular role for the live lecture over written notes or a book is reflected in the following comment which she made when I played back to her the above extract from her lecture:

She said:

"I also feel that, as a sort of tenet of the teaching process, that the only advantage of a lecture over reading it, is one can give emphasis, because the written word is so flat, and so unemphasised, that this is what one should be doing, I think."

However, despite my expectations and the lecturer's own belief in bringing the spoken word 'to life', there was not an exceptionally large number of statements falling into the two vicarious categories: 50 as opposed to 82 in the four extrinsic categories and 99 in the two intrinsic categories.

That there were difficulties in differentiating vicarious experience from intrinsic and a relatively low number of vicarious statements for lectures that were particularly 'vicarious' in their
presentation lends support to my suggestion in Chapter 4: that the boundary between vicarious and intrinsic experience is a very delicate one and 'good' vicarious experience may often develop into intrinsic experience.

The main problem, I think, in categorising the statements was in deciding when 'good' vicarious experience stimulated by the lecturer did (if it did) become intrinsic. Hence the difference among the judges.

Two statements made by students in response to the lecture extract about the fish will serve to illustrate the problem:

Student 1:

"It sort of flashed through my mind, actually picturing what happens because I've seen them pulling their catch in, the trawl. It was just like that, they sort of tread all over them, I thought goodness me, how do they ever get back, if they're not in one piece are they fairly fresh... Imagining all the bacteria on their boots coming off on to them .... I was just imagining it."

Student 2:

"Umm a very colourful way of saying it, but quite valid I think, most of us have probably been on a fishing boat or seen pictures of fishing boats and you know you think, ah well, you know, even as microbiologists, you think, well just a normal ship, you know, sterile and it doesn't sort of bring it home unless, you know, there is an example like that. It was a very quick reference really but the mind goes back to you know, the time when you were squelching around in fish and ummm, you know, it emphasises it that much more."

It could be argued that the first student accepts the 'picture' offered by the lecturer but goes beyond it when she says: "How do they ever get back, if they're not in one piece are they fairly fresh?" Thus the student seems to cross the boundary from vicarious to intrinsic.

On the other hand, the second student stays in the vicarious domain. There doesn't seem to be any attempt to take the lecturer's input any further than identifying with the situation described.
When the lecturer described or illustrated her point in a not so vivid way the difficulty in drawing a demarcation line seemed to decrease. Thus, there is little difficulty in suggesting that the following statement represents vicarious experience of relevance.

The student is commenting about an occasion when the lecturer simply scribbled a drawing of a duck on the board whilst discussing the microbiology of the bird.

"I mean, if she just wrote up on the board sort of cow or duck or whatever; if she's talking about ducks, or ducks' eggs she has a funny drawing. I don't know why, I find it a bit better than just writing the word on the board .... sort of relate to it more than just seeing the word up there. Otherwise it would be just like any other word really that she's writing up on the board during the lecture."

There somehow seems less likelihood here of the student's vicarious experience of relevance, associated with this less powerful input or illustration, developing into intrinsic experience.

5.4.2. Analysis of the transcribed statements

After categorising the tape - only sessions, I felt that the system was sufficiently defined to be used by me with reasonable confidence. Thus, with the transcribed statements, I decided to do the full categorising alone, asking a judge to categorise a 20% sample only.

In fact, I categorised the statements twice, leaving a sufficient interval in between to make the second attempt relatively 'independent'. I then included in the sample to be given to the judge all those statements where I differed over the two attempts. There were 19 such statements from a total of 119. I increased the sample to 24 (and 20%) by choosing a further five statements at random.

I had the most difficulties, as with the taped statements, in deciding whether a statement was intrinsic or vicarious.
I outline below the 19 disagreements:

**Total disagreement between 1st and 2nd attempt**

19

**Intrinsic v Vicarious categories**

- Intrinsic; specific v vicarious; illustrative: 2
- Intrinsic; general v vicarious; illustrative: 4
- Intrinsic; specific v vicarious; perceived: 2

Total: 8

**General v Specific categories**

- Intrinsic; specific v Intrinsic; general: 2
- Extrinsic; specific own P. v Extrinsic; general own P.: 1

Total: 3

**Vicarious; illustrative v Vicarious; perceived**

2

The remaining five disagreements were all single instances.

In categorising his 20% sample, the judge agreed with my final categorisations of the statements for all but 5 of them - a 21% disagreement. This was very encouraging, particularly as I had not previously used the judge and had asked him to consider the 'problem' statements. As with the judge for the taped-only sessions, I gave him additional written information to facilitate his task, which he reported was useful.

The disagreements were as follows:

**Total disagreements**

5

- Intrinsic; specific v vicarious illustrative: 2
- Extrinsic; general own P. v Extrinsic; specific own P.: 2
- Vicarious perceived v Extrinsic general other P.F.: 1

We discussed these disagreements and quickly agreed on how all 5 statements should be categorised.
5.5 Results of the Analysis

As in the previous case study, I summarised the results of the analysis of students' statements by calculating the proportion that fell into each level of experience.

Table 5.3 shows the percentage of each student's statements occurring in all the eight categories with the date of the relevant lecture. The asterisked lectures are those for which the stimulated recall sessions were fully transcribed. Table 5.4 groups together all statements occurring in each of the three levels of experience.

Let me now look at the individual scores in some detail. The high extrinsic scores recorded for IMB (in Table 5.4) supports her earlier inferred assessment orientation towards the course. Table 5.3, however, shows that she tended to perceive the extrinsic demands upon her from her own rather than the lecturer's perspective. She was also able to experience the content intrinsically to some extent.

Table 5.4 similarly confirms that both 3 MB and 8 MB tended to experience the content extrinsically. However, their appreciation of the relevance of the subject and of the lecturer's concern to relate the content to everyday things, which was mentioned in Section 5.3, is reflected in their vicarious and intrinsic scores. Both students had, for one lecture each (3 MB, 11/1 and 8 MB, 28/1), a more or less balanced proportion of statements at all levels. This was not the case with 8 MB for his other lecture (18/1): on this occasion he apparently felt less able to identify with the content or the lecturer's illustrations and examples, and possibly as a result of this experienced the relevance of this lecture at an essentially extrinsic level. 3 MB did only one stimulated recall. Both 3 MB and 8 MB, like 1 MB, experienced the relevance of the content extrinsically from their own perspective.
<table>
<thead>
<tr>
<th>Student</th>
<th>Date of Lecture</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Total Number of Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 MB</td>
<td>18/1</td>
<td>7.1</td>
<td>7.1</td>
<td>21.4</td>
<td>28.6</td>
<td>-</td>
<td>7.1</td>
<td>7.1</td>
<td>21.4</td>
</tr>
<tr>
<td></td>
<td>28/1</td>
<td>11.8</td>
<td>5.9</td>
<td>17.6</td>
<td>5.9</td>
<td>5.9</td>
<td>11.8</td>
<td>11.8</td>
<td>29.4</td>
</tr>
<tr>
<td>2 MB</td>
<td>7/12</td>
<td>6.7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6.7</td>
<td>46.6</td>
<td>6.7</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>14/1</td>
<td>-</td>
<td>-</td>
<td>7.1</td>
<td>14.3</td>
<td>7.1</td>
<td>21.4</td>
<td>14.3</td>
<td>35.7</td>
</tr>
<tr>
<td>3 MB</td>
<td>12/1</td>
<td>12</td>
<td>-</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>8</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>4 MB</td>
<td>14/1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6.3</td>
<td>-</td>
<td>6.3</td>
<td>6.3</td>
<td>81.3</td>
</tr>
<tr>
<td></td>
<td>28/1</td>
<td>-</td>
<td>-</td>
<td>25</td>
<td>-</td>
<td>-</td>
<td>8.3</td>
<td>-</td>
<td>66.7</td>
</tr>
<tr>
<td>5 MB</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>40</td>
<td>10</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>10/1</td>
<td>23.1</td>
<td>15.4</td>
<td>7.7</td>
<td>7.7</td>
<td>7.7</td>
<td>-</td>
<td>-</td>
<td>38.5</td>
</tr>
<tr>
<td>6 MB</td>
<td>11/1</td>
<td>-</td>
<td>-</td>
<td>9.1</td>
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<tr>
<td>7 MB</td>
<td>11/1</td>
<td>-</td>
<td>-</td>
<td>6.3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>18.7</td>
<td>75.0</td>
</tr>
<tr>
<td></td>
<td>28/1</td>
<td>-</td>
<td>-</td>
<td>4.8</td>
<td>9.5</td>
<td>-</td>
<td>9.5</td>
<td>-</td>
<td>76.2</td>
</tr>
<tr>
<td>8 MB</td>
<td>18/1</td>
<td>20</td>
<td>-</td>
<td>26.7</td>
<td>26.7</td>
<td>-</td>
<td>6.7</td>
<td>13.3</td>
<td>6.7</td>
</tr>
<tr>
<td></td>
<td>28/1</td>
<td>5.6</td>
<td>-</td>
<td>16.7</td>
<td>11.1</td>
<td>5.6</td>
<td>22.2</td>
<td>-</td>
<td>38.9</td>
</tr>
</tbody>
</table>
Table 5.4 Percentage of Student Statements Occurring in Each Level of Experience.

<table>
<thead>
<tr>
<th>Student</th>
<th>Date of Lecture</th>
<th>Extrinsic Levels 1 - 4</th>
<th>Vicarious Levels 5 and 6</th>
<th>Intrinsic Levels 7 and 8</th>
<th>Total Number of Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 MB</td>
<td>* 18/1</td>
<td>64.2</td>
<td>7.1</td>
<td>28.5</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>28/1</td>
<td>41.2</td>
<td>17.7</td>
<td>41.2</td>
<td>17</td>
</tr>
<tr>
<td>2 MB</td>
<td>* 7/12</td>
<td>6.7</td>
<td>53.3</td>
<td>40.0</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>14/1</td>
<td>21.4</td>
<td>28.5</td>
<td>50.0</td>
<td>14</td>
</tr>
<tr>
<td>3 MB</td>
<td>* 11/1</td>
<td>44.0</td>
<td>24.0</td>
<td>32.0</td>
<td>25</td>
</tr>
<tr>
<td>4 MB</td>
<td>* 14/1</td>
<td>6.3</td>
<td>6.3</td>
<td>87.6</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>28/1</td>
<td>25.0</td>
<td>8.3</td>
<td>66.7</td>
<td>17</td>
</tr>
<tr>
<td>5 MB</td>
<td>* 7/12</td>
<td>-</td>
<td>50.0</td>
<td>50.0</td>
<td>10</td>
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<tr>
<td></td>
<td>18/1</td>
<td>53.9</td>
<td>7.7</td>
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<td>13</td>
</tr>
<tr>
<td>6 MB</td>
<td>* 11/1</td>
<td>9.1</td>
<td>-</td>
<td>90.9</td>
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<td></td>
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<td>7 MB</td>
<td>* 11/1</td>
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<td>34.4</td>
<td>27.8</td>
<td>38.9</td>
<td>18</td>
</tr>
</tbody>
</table>

Average 28.1 16.9 55.0
In Section 5.3 I explained that the microbiology students seemed to demonstrate two qualitatively different kinds of intrinsic experience. One was associated with students relating the content to their own everyday experience (as 2 MB and 5 MB did) and the other with relating it to both their own everyday experiences plus their academic knowledge (as 4 MB, 6 MB and 7 MB).

I suggested that if the category system, as a whole, was unable to distinguish between the experience of these two groups of students this would reflect an important weakness in the system.

Examination of Tables 5.3 and 5.4 shows, however, that there is a difference in the experience recorded for these students. Students 2 MB and 5 MB recorded the highest vicarious scores (7/12, 2 MB and 5 MB and 14/1 2 MB) whilst 4 MB, 6 MB and 7 MB scored both low vicarious and the highest intrinsic scores.

Thus, the category system does differentiate these two groups of students. Moreover, these scores suggest that the lecturer's 'vicarious presentation' was important to the experience of 2 MB and 5 MB.

That the lecturer's vicarious presentation was important to their intrinsic experience is suggested from the 18/1 lecture in which 5 MB scored both a low vicarious score and a relatively high extrinsic score. The other results for this lecture indicate that the lecturer may not have achieved her usual level of 'vicariousness' for this lecture. It is the one for which 8 MB recorded his high extrinsic, low vicarious score and 1 MB similarly recorded her highest extrinsic score. That 5 MB scored neither a high vicarious nor intrinsic score for this apparently less 'vicarious' lecture does suggest that, for her, vicarious and intrinsic experience of the lectures might have been inter-related and associated with the lecturer's vicarious presentation.
On the other hand, the intrinsic experience of 4 MB, 6 MB and 7 MB did not seem to be closely inter-linked with vicarious experience. Their statements consistently reflected high intrinsic experience even for lectures where other students had relatively high extrinsic scores (e.g. 1 MB on 28/1 in contrast to all three of the students; and 3 MB on 11/1 in contrast to 6 MB and 7 MB).

Thus the intrinsic experience of 4 MB, 6 MB and 7 MB seemed less dependent on the lecturer’s presentation and qualitatively greater than both 2 MB and 5 MB. Tables 5.3 and 5.4 show this was never to the total exclusion of extrinsic experience of relevance, though in no case did their extrinsic score exceed 25%. Most of their extrinsic statements were general own perspective, which tends to suggest they had an ongoing alertness to the 'necessities of life'.

5.6 Discussion of Results

In this case study I wanted to examine further the influence of three factors on students experience of the relevance of the lecture content:

(1) The teaching and learning context;
(2) Existing background knowledge and experience; and
(3) The lecturer.

I also wanted to examine differences among individual students' experience of the relevance of the lectures and whether the eight categories of experience identified in the previous study were able to discriminate between these students.

Taking this last point first; the results shown in tables 5.3 and 5.4 and discussed in Section 5.5 indicate that the categorisation system was able to differentiate between these students, and that it
was possible, by categorising individual's statements, to identify
differences in the way the different students experienced the relevance
of the lecture content. The differences between students' experience,
in general, supported and agreed with the earlier descriptions (Section
5.4) of their orientation towards the course.

I shall now examine the three 'influencing factors'.

1. The influence of the teaching and learning context: The teaching
and learning context for this course was, as I explained earlier, (Section
5.0) essentially the same for all the students. This is reflected in
the results of the course questionnaire which also suggested that it
was a positive and supportive context (Section 5.2). I would expect
this last factor to have contributed to the high intrinsic scores for
the microbiology students. That the intrinsic scores were not
consistently high would suggest that the teaching and learning context
either cannot, on its own, produce predominantly intrinsic experience
or that this particular context was not sufficiently positive to achieve
this. Either way it would seem the teaching and learning context
was not omnipotent.

A particular feature of the microbiology context was the
assessment at finals. I wondered earlier (Section 5.0) whether the
pressure of finals might encourage extrinsic experience. There was,
however, no evidence to suggest this. When the mostly intrinsic
students (4 MB, 6 MB and 7 MB), did experience the context extrinsically,
they tended to do so from their 'own perspective general', rather than
'specific'. This might be explained by reference to the assessment
system. Without knowing what questions they would have to answer in
their finals they would find it difficult to envisage how to incorporate
a specific piece of content into an examination answer. The research
methods students, on the other hand, were constantly engaged in a
a particular assessment exercise and this would probably be the extrinsic demand uppermost in their mind at any time. This could explain why the intrinsic human science students, when they experienced the relevance extrinsically, tended to do so from their own and specific perspective.

1. The influence of existing background knowledge and experience: As I have already mentioned and as the results summarised in Table 5.4 show, the microbiology students tended to be intrinsic in their experience, and they were much more so than, for example, the research method home economic students. The average intrinsic score of the home economic students was 31.2% compared to 55% for the microbiology students. There are many possible explanations for this difference: the microbiology students were doing a chosen option and not a compulsory subsidiary one; they knew the lecturer; their lecturer had a vicarious presentation. Also, however, the microbiology students were much more familiar with their subject than the home economics students. Their greater existing background and familiarity may have contributed to their greater tendency to intrinsic experience.

Whether this was, indeed, the case is best considered by examining the average intrinsic scores for the earliest lecture recalled and that for the second, later lecture. For both the early and later lectures, it can be assumed, the microbiology students had an existing background knowledge. The home economics students, however, were only just acquiring a familiarity with the subject as a result of doing the research method course and it might, therefore, be assumed that their background knowledge and experience would be greater for the later lecture than for the earlier. Thus, if background knowledge is influential to intrinsic experience, one would expect the earlier and later microbiology average intrinsic scores to be similar, but the home economics to be greater, with their increased familiarity, for the
later lectures. As shown below this was the case.

<table>
<thead>
<tr>
<th></th>
<th>Earlier Lecture</th>
<th>Later Lecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average intrinsic score for microbiology students:</td>
<td>55.3%</td>
<td>54.7%</td>
</tr>
<tr>
<td>Average intrinsic score for home economic students:</td>
<td>29.6%</td>
<td>40.7%</td>
</tr>
</tbody>
</table>

Thus, it may well be that familiarity and background knowledge is important for intrinsic experience and that the higher intrinsic scores of the microbiology students was, in part, due to this.

3. The Influence of the lecturer: I have explained that this lecturer had a very vicarious style of presentation, and that the students were apparently positively predisposed towards her. Similarly, in their questionnaire responses the students rated her highly for such characteristics as 'Appears to be enthusiastic for her subject'.

For these reasons, one might expect to find much vicarious experience among the students. This was not generally the case. However, it did appear that, for some, the lecturer's vicarious presentation did influence their experience of the content. I suggested earlier, for example, (Section 5.5), that the intrinsic experience of both 2 MB and 5 MB might be inter-related with their vicarious experience and the lecturer's presentation. Also, for one lecture (18/1) the statements of all the students (1 MB, 5 MB and 8 MB) who recalled this lecture reflected both low vicarious and particularly high extrinsic scores. I suggested that this possibly indicated that for this particular lecture the lecturer did not achieve her usual level of vicariousness and that this, in its turn, had an influence upon the proportion of intrinsic and extrinsic experience recorded for that lecture.

As far as predisposition is concerned, it does seem that students who tend to experience the relevance of the content intrinsically
also tend to be positively predisposed towards the lecturer. It is interesting to examine the average scores of the microbiology students and research method human science students, who both tended to be intrinsic, with those of the more extrinsic home economics students for those questions where the microbiology students rated their lecturer particularly well.

<table>
<thead>
<tr>
<th>Has good rapport with students (Q4)</th>
<th>MB</th>
<th>H. Sci</th>
<th>Ho.Econ.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.25</td>
<td>4.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Is approachable and friendly with students (Q6)</td>
<td>4.67</td>
<td>4.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Has a wide knowledge of his/her subject (Q12)</td>
<td>4.13</td>
<td>4.3</td>
<td>4.0</td>
</tr>
<tr>
<td>Appears to be enthusiastic for his/her subject (Q19)</td>
<td>4.5</td>
<td>4.4</td>
<td>3.8</td>
</tr>
</tbody>
</table>

(N.B. - Scores given are the average from ratings given on a 1 - 5 point scale, 5 being the positive end of the scale.)

It is noticeable that it is the ratings for questions 4 and 6 concerning interpersonal characteristics that the home economics students' differ the most markedly from those given by the more intrinsic groups of students. It is not really possible from these results to say whether or not students' perceptions of the lecturer actually influenced their experience of the content. I will discuss the relationship between their perceptions and experience further in Chapter 8.

Having discussed the influences of teaching and learning context, background knowledge and experience and the lecturer upon these students' experience, it is interesting to conclude this case study by re-examining the students' final degree results and their assessment positions for the food, water and dairy option alongside the way they tended to experience the relevance of the lectures.
Table 5.5

Students' Experience of relevance compared with final degree results

<table>
<thead>
<tr>
<th>Student</th>
<th>Final Degree</th>
<th>Position in Class of 17 for Food Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 MB</td>
<td>2B</td>
<td>10</td>
</tr>
<tr>
<td>3 MB</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>8 MB</td>
<td>2B</td>
<td>14</td>
</tr>
<tr>
<td>2 MB</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>5 MB</td>
<td>2A</td>
<td>5</td>
</tr>
<tr>
<td>4 MB</td>
<td>2A</td>
<td>4</td>
</tr>
<tr>
<td>6 MB</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>7 MB</td>
<td>2A</td>
<td>12</td>
</tr>
</tbody>
</table>

Thus, the more extrinsic students (1 MB, 3 MB and 8 MB) all obtained a lower second or third class degree, whilst the three most intrinsic students (4 MB, 6 MB and 7 MB) all obtained an upper second or first. The two vicarious/intrinsic students (2 MB and 5 MB) occupy a mid-ground position. These results suggest that the more 'successful' students, in terms of assessment criteria, were the more intrinsic students.

In the next and last case study I will explore further students' experience of relevance of lecture content and influences upon this.
CHAPTER SIX

CASE STUDY 3: THE APPLIED PHYSICS AND ENERGY COURSE
CHAPTER 6: CASE STUDY 3: APPLIED PHYSICS AND ENERGY

6.0 Introduction and Background

The third case study concerned a first-year, applied physics and energy course. As in the earlier case studies, I examined how far individual students' experiences of lecture relevance differed and whether the eight levels of experience of relevance discriminated between them.

I also considered the importance or influence of existing background knowledge and familiarity and of the teaching and learning context.

On both of these last two issues the course was different from the previous two case-studies. It was a new one which had been developed in response to concern about the poor working knowledge of physics shown by many first-year Engineering students. Consequently, the course was taken by all first-year students from the School of Engineering and Applied Sciences (EAPPS).

All the students had either an 'A' level, OND or equivalent qualification/experience in Physics, and so had some existing, though differing amounts of knowledge of the subject.

One would not expect first-year students to be, at least initially, as immersed in their school's values and general ethos as the final-year microbiology students of the second case study. The "network or nexus of cultural, social and psychological variables" would still be in the process of developing. They started off the year with different ideas and attitudes but, during the ensuing months, it was possible to identify the emergence of a common ethos.
Despite the initial differences, the teaching and learning context was, in a general sense, the same for all students. It was true that they were registered for different majors - 50% for either electronics or electrical engineering and 17% for mechanical engineering - but this did not, in the first two terms, affect them in any practical sense. On the other hand, they belonged to the same school and the course was compulsory for them all.

The students were like the home economics research method students in that they had to take a course given by a lecturer from another department (the School of Mathematics and Physics) but like the human science research method students and the microbiology students in that they had an existing (if varied) background knowledge of the subject.

Later, I will look at the influence of both taking a course given by a lecturer from another department and having an existing background knowledge of the subject upon the EAPPS students' experience of the lectures. I will also contrast their experience with that of other students studied in earlier chapters.

I shall conclude this section by describing in greater detail the structure and format of the course. It ran over two terms conceived of as the 'preliminary' part of the EAPPS degree courses and was taken by all 98 students.

There were two lectures a week, on a Tuesday and Wednesday morning, both at 10.00a.m. The intention was that one lecture a week should focus on energy and one on physics. The lecturer's attempts to stick to this format during the first (autumn) term ran into difficulties (see later, Section 6.2) and it was therefore changed
in the second (spring) term to weekly units focussing on either physics or energy.

The course lecturer described the energy aspect of the course as an appetiser to make the physics seem relevant; the main purpose of the course being to bring the students' physics up to scratch.

The lecturer's description of the energy aspect relates interestingly to the students' views of the course and I shall discuss this later (Section 6.2).

In addition to the lectures, there were 'problem classes' and seminars (or 'skill' sessions). These were held on alternating weeks. Both were attended by approximately 15 students and taken by one of seven course tutors, most of whom were from EPS.

Students were supposed to do problems from worksheets prior to the problem classes, in which they discussed their solutions. The doing of the problems prior to the classes was not, however, compulsory. In the seminars they were split into groups of three or four and given an exercise to do together. The aim of the exercises was to develop skills such as estimating orders of magnitude.

There were three components to the assessment of the course:

(1) A 1½ hour, 40 question multi-choice paper in January, covering Term 1 material;

(2) A 1½ hour, 30 question multi-choice paper in March, covering Term 2 material;

(3) A 2½ hour conventional paper in March in which 5 out of 10 questions had to be answered, covering both terms' work.

6.1 Choice of Students

Once again I used the key-factor questionnaire to choose the students whose approach to the lectures I wanted to study in greater depth.
As with the microbiology students I found relatively few EAPPs students (20%) who felt themselves to be very influenced by personal aspects of the lecturer in their opinion of the lectures. This is, perhaps, not very surprising since they filled in the questionnaire in the fourth week of the course, when the lecturer would be one of many new faces. On the other hand, it may be that engineering students (and science students in general) genuinely perceive themselves to be less influenced by inter-personal qualities.

In any case, I chose nine students across the range of key-factor scores. I chose two students (1 EAPFS and 2 EAPPS) who were most influenced by personal factors and also a third student (3 EAPPS) who, while not one of the most influenced, had a KF score with a standard deviation of 0.

I then chose, at random, two mid-range students (4 EAPPS and 5 EAPPS), and four who were least influenced by personal factors (6 EAPPS, 7 EAPPS, 8 EAPPS, and 9 EAPPS). These last four students all had key-factor scores with a standard deviation greater than one but, as this applied to the majority of the students in this group, I felt there was little I could do if I wanted students who were potentially at opposing poles.

There was originally a tenth student but he did not agree to participate in the research. He was a foreign student who seemed suspicious of my motives: he did say that he would meet me but we were never able to arrange a suitable time.

The students who did participate in the study are listed in Table 6.1, with their major subjects and gradings for each of the assessment components, together with their overall grade for the course.
<table>
<thead>
<tr>
<th>Student</th>
<th>Major</th>
<th>Multi-Choice</th>
<th>Conventional</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 EAPPS</td>
<td>Electronics</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2 EAPPS</td>
<td>Mech. Eng.</td>
<td>6</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3 EAPPS</td>
<td>Electronics</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4 EAPPS</td>
<td>Electronics</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>5 EAPPS</td>
<td>Compt. Science</td>
<td>6</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6 EAPPS</td>
<td>Electronics</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7 EAPPS</td>
<td>Control Eng.</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8 EAPPS</td>
<td>Electronics</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>9 EAPPS</td>
<td>Mech. Eng.</td>
<td>5</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

I was unable to do any stimulated recalls of lectures with one student (1 EAPPS) and managed only one with three students (4 EAPPS, 8 EAPPS and 9 EAPPS). 1 EAPPS was attending only very few of his lectures at the time I asked him, but I did interview him and he completed a repertory grid for me. 4 EAPPS did not attend the later lectures in the course, and 8 EAPPS forgot to turn up for a session and there was no opportunity to arrange an alternative time. I had particular problems in contacting 9 EAPPS, and by the time I did there was no longer sufficient time to fit in two sessions.

I did two stimulated recalls with the remaining five students and all nine completed a repertory grid.

6.2 Monitoring of the Course

This was the first year in which the applied physics and energy course had been included in the first-year EAPPS curriculum. Thus the
school had asked the Teaching and Learning Support Program (TLSP) at the university to evaluate the course. The TLSP convenor formed a small working party, consisting of himself, the lecturer of the course, a course tutor from EAPPS and myself to carry out the evaluation. As part of this study students were asked to complete two questionnaires, one at the end of each term. The data from these questionnaires gave me an indication of how the class as a whole felt about the course.

The Autumn-term questionnaire was basically aimed at eliciting information which might lead to immediate changes in the course. It was developed largely from information I had picked up through talking to students and concentrated on areas the lecturer felt would be useful for him at this stage of the course.

A copy of the questionnaire together with the mean ratings obtained is shown overleaf. The physics and energy strands of the course were rated separately. There was an approximate response rate of 68%.

As the response to Question 1 shows, the students felt the course to be bitty and they suggested in their comments that this was caused by the constant alteration from physics to energy. As a result, the lecturer changed the format from alternate physics and energy lectures to alternate weekly units of either physics or energy.

From the point of view of general attitudes towards the course I found the response to Questions 2 and 4 informative. The Question 2 response indicates that there was a tendency to find the energy side of the course more interesting than the, apparently, fairly boring physics side; the Question 4 response reveals that the students did not altogether see how either side, and in particular the energy strand, related to their other courses. These responses seem
APPLIED PHYSICS and ENERGY QUESTIONNAIRE

This is a new course, being given for the first time. To help improve it both for next year and for next term, it will be helpful if you will answer the following questions on your reactions to the course.

You answer most questions by entering a number 1, 2, 3, 4, 5 or 0.

1 means strong agreement with view (1)
2 means you are inclined to agree with (1)
3 means you agree with a view midway between (1) and (5)
4 means you are inclined to agree with (5)
5 means you agree strongly with view (5)
0 means you have no opinion, or find the question is not applicable, or is unanswerable.

If your answers are strongly influenced by specific factors, please specify these in the spaces left for comments, or in your reply to question 17.

What is your major (e.g. Computing Science) ? ..........................

Who was your tutor for the course ? .................................
TEXT BOUND INTO
THE SPINE
<table>
<thead>
<tr>
<th>Survey Questions</th>
<th>Physical Strand</th>
<th>Energy Strand</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you find that each strand of the course develops coherently (5) seems bitly?</td>
<td>3.6</td>
<td>3.6</td>
</tr>
<tr>
<td>2. Do you find the course material interesting (5) boring?</td>
<td>3.4</td>
<td>2.6</td>
</tr>
<tr>
<td>3. Do you feel that doing this course is useful to you (5) a waste of your time?</td>
<td>3.0</td>
<td>2.7</td>
</tr>
<tr>
<td><strong>Please comment on why?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Do you find that the subject matter doesn't seem to have much connection with other courses (5) helps a lot with other courses</td>
<td>3.0</td>
<td>2.8</td>
</tr>
<tr>
<td>5. Comparing the total effort that you put into this course with that on other courses, do you spend (1) significantly more effort (5) significantly less effort?</td>
<td>4.0</td>
<td>3.9</td>
</tr>
<tr>
<td>6. What do you consider to be the BEST feature of the course:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What do you consider to be the WORST feature of the course:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lectures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Is note taking (1) difficult (5) easy?</td>
<td>3.2</td>
<td>2.8</td>
</tr>
<tr>
<td>8. Is the speed of the lectures (1) too fast (5) too slow?</td>
<td>2.7</td>
<td>3.0</td>
</tr>
<tr>
<td>9. Do you find the duplicated material handed out in lectures (other than problem sheets) (1) valuable (5) unhelpful</td>
<td>2.4</td>
<td>2.2</td>
</tr>
</tbody>
</table>
Problem Sheets

10. Was the general standard of the problem sheets
   (1) too difficult (5) too easy?
   2.9 2.8

11. How could the problem sheets be improved:

Tutorials

12. Did you find the tutorials for the course
   (1) most useful (5) a waste of time?
   2.8 3.0

Please say why:

13. Tutorials can help in various ways e.g.
   A. discussing concepts          D. giving feedback on progress
   B. working through problem sheets E. discussing wider issues
   C. helping with individual difficulties F. advising on key areas and
     strategies for study

Tick those which most time was devoted to:

<table>
<thead>
<tr>
<th></th>
<th>35 A</th>
<th>12 D</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 B</td>
<td>17 E</td>
<td></td>
</tr>
<tr>
<td>20 C</td>
<td>5 F</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other (specify),</td>
</tr>
</tbody>
</table>

Tick the two you think most should be devoted to:

<table>
<thead>
<tr>
<th></th>
<th>35 A</th>
<th>12 D</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 B</td>
<td>23 E</td>
<td></td>
</tr>
<tr>
<td>16 C</td>
<td>16 F</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other (specify),</td>
</tr>
</tbody>
</table>

Seminars

14. Were the reasons for doing the seminars
   (1) adequately explained (5) not sufficiently explained
   3.2 3.4

15. Should the problems tackled (1) be more closely related to the course
   (5) be left as they are?
   3.0 2.8

16. Were the seminars (1) useful (5) unhelpful?
   3.2 3.3

Please say why:

General comments

17. Please make any other general comments, criticisms, suggestions for improvement:
indicative of a feeling that was further elaborated in response to Question 6, about the worst and best features of the course. This showed that the energy part was seen as interesting but rather as general knowledge, and that the physics part as neither particularly interesting nor useful. It was possibly this attitude that led students, as they reported in response to Question 5, to put significantly less effort into this course than other courses.

A copy of the spring term questionnaire with the ratings obtained is given in the appendices. The results of this questionnaire cannot however, be taken as representative of the class as a whole, for only 17 students completed it. This low response was due to a largely effective student boycott of lectures at the time of the last lecture when the questionnaire was given out. The lecturer did send copies of the questionnaire to the students but few returned them.

The prevailing feeling, then, among the students, at least at the end of the first term, seemed to be one of uncertainty about the relevance and the usefulness of the course. These feelings were greater with respect to the energy strand because, according to comments, little attention was paid to this aspect in the tutorials and they felt that the assessment would concentrate on the physics side, the energy side being included for interest only. This last opinion is interesting in view of the lecturer's comments (Section 6.0) that the energy focus was an appetiser to make the physics more relevant and that the real purpose of the course was to bring the students' physics up to scratch. In point of fact, 17 of the 40 January questions were set on energy material, although half of these did require the application of physics ideas for their solution.
6.3 Students' Orientation towards the Course

As in the previous two case studies I got an initial indication of individual differences among the nine students by carrying out a preliminary analysis of comments made during the stimulated recall sessions. I was able, on the whole, to fit the students' comments into the same six broad areas of concern:

(1) Background experience
(2) Assessment
(3) Personal Relationship (and perceptions)
(4) Presentation
(5) Work and Study habits
(6) Relevance and Interest

Using this initial analysis as a framework I developed the following descriptions of the students' orientations towards the course.

Students 2 and 9 EAPPS were predominantly assessment-orientated and so designated the course as a low priority. This, of course, is in accord with the general feelings of uncertainty about the relevance or usefulness of the course.

2 EAPPS explained that he spent less time on the course because "the consensus of opinion going around at the moment is they, a lot of people, think it is a complete and utter waste of time."

Similarly 9 EAPPS remarked: "Mind you, last term we were told not to take much notice of the course, it didn't matter if we failed; if we failed or not; if you passed or not." Both students hadOND Physics and so to some extent were the very students the course was aimed at.

7 EAPPS did not question the point of doing the course but had an inherent dislike of the subject, a hang-over from school. Possibly as a result of this attitude she also seemed to have an assessment orientation towards the course. She was, however, able to utilise her
existing knowledge explaining that in the lectures she tried to think what the lecturer was going to say next. She also admitted that she was finding the subject more interesting at university than at school, commenting on both the lecturer's way of explaining things and the films and illustrations used. 7 EAPPS was in one of the lecturer's tutorial groups.

3 EAPPS again seemed somewhat divided in his attitude towards the course. He identified very much with the energy and application aspect of the course but commented that some of the physics was just as boring this time as the first time (at school). He did find it helpful doing the physics strand in parallel with the energy but, as he explained, his priority was to get the lectures down on paper right rather than absorb them.

5 EAPPS commented, in the same vein as 2 and 9 EAPPS, that "some people in the group think this course is a waste of time". She qualified this, however, by saying: "I don't think any course you do at university is a waste of time." She went on to explain that in the lectures she liked to understand what was being done and tried to relate it to what had already been done. She was not, however, unmindful of assessment demands. She also commented on the importance of a lecturer being able to come down to the students' level, something which she felt this lecturer was able to do. Like 7 EAPPS she was in one of the lecturer's tutorial groups.

The remaining four students were, like 5 EAPPS, able to see the content from their own framework and reality. 4 EAPPS found the course interesting but could not altogether see how it fitted in with his other courses. Nonetheless, he liked the relation of the course material to real life and thought it was good stuff to know. Like many of the students, he found he had done a lot of the physics before.
Thus, he did not go to the later lectures because he felt he knew the physics already: it was very easy and, consequently, rather boring. 4 EAPPS seemed to be describing a situation where the material was perceived as so familiar that it was simply not necessary to fit it into his own framework of thinking because it was already a well-established part.

There was no evidence to suggest that he stopped attending lectures because he perceived the course to be of low priority.

6 EAPPS and 8 EAPPS were fairly similar in their orientation towards the course. Both felt to varying degrees that:

1) They had done most of the physics before, although not necessarily to the same depth;
2) They tried to relate the theoretical content (in particular) to previous existing knowledge;
3) They enjoyed the energy everyday appreciation aspect of the course.

Neither, however, was unmindful in their orientation of assessment demands.

1 EAPPS, despite his non-attendance of both the physics and energy lectures, had a high opinion of the relevance of the course, particularly the energy strand. He said:

"I think, yeh I think it's the relevance of energy, I mean if one's social minded then one should be interested in that kind of thing."

Like the other students, he found he had done most of the physics before and did not find it very difficult. His main reasons, however, for not attending the lectures were complex and related to a growing disillusionment with the school. He wanted to change to theoretical physics and, later, did. At the time of the interview, he was attending tutorials but no lectures.
Taking the nine students as a whole, there would appear to be four major factors at work influencing their orientation towards the course:

1) Perceived low priority of the course
2) Previous coverage and familiarity with the material
3) Perceived relevance of the physics, either doing it again or doing it at all
4) Perceived relevance of the energy strand.

The first of these factors is one that is most likely to be associated with an essentially extrinsic experience of the relevance of the lecture content.

The second, on the other hand, at least has the potential of being associated with an intrinsic experience of the relevance of the lecture content. 7 EAPPS, whose previous experience of the subject was of a rather negative nature, is an example where previous experience is more likely to be associated with extrinsic experience.

Whether or not the third and fourth factors would be expected to be associated with essentially intrinsic or extrinsic experience of relevance is, arguably, likely to depend on whether the perceived relevance was positive or negative. A positive perception of the relevance of the energy strand may, perhaps, also be associated with a vicarious experience of the relevance of the physics - through affording illustrations of its energy application.

In the following sections I shall examine the extent to which the eight levels of experience of relevance exist amongst these students and effectively discriminate between their individual experiences of the relevance of the lecture content. In particular, I shall examine whether they discriminate between students like 2 EAPPS, who designated the course as low priority but was not totally unfamiliar with the material, and a student like 5 EAPPS who seemed able to relate the content in a meaningful way to material already familiar to her.
6.4 Levels of Experience of Relevance.

In order to determine whether students experienced the relevance of the lectures extrinsically, vicariously or intrinsically I again extracted all students' statements that gave the slightest indication of their experiences.

The next step was to decide in which of the eight categories to place the statements. To recall, the eight categories were:

1) Extrinsic; other person's perspective, general
2) Extrinsic; other person's perspective, general
3) Extrinsic; students' own perspective, general
4) Extrinsic; students' own perspective, specific
5) Vicarious; perceived
6) Vicarious; illustrative
7) Intrinsic; general
8) Intrinsic; specific

As in the previous cases there were two sets of statements: those from fully transcribed sessions and those taken directly from tapes.

The categorisation of each set was done in the first instance by myself, carrying out, as before, two attempts at categorisation. Then another judge checked a 20% sample, included in which were, as before, all the statements over which I differed in my two categorisations. Further statements in the sample were chosen at random.

There was a total of 131 statements from the fully transcribed sessions and 63 from the taped.

6.4.1 The transcribed statements

The type and number of differences between my first and second attempts at categorising the statements are outlined below. I had doubts about 12 of the 131 transcribed statements. This included 4 statements which I had categorised
the same on both occasions but remained slightly doubtful about.

Three of these four statements, it seemed to me, were intrinsic general, and one vicarious illustrative.

The remaining eight differences were:

<table>
<thead>
<tr>
<th>Statement Type</th>
<th>Disagreements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic; general v Intrinsic; specific</td>
<td>3 disagreements</td>
</tr>
<tr>
<td>Intrinsic; specific v Vicarious; illustrative</td>
<td>1 disagreement</td>
</tr>
<tr>
<td>Intrinsic; general v Vicarious; illustrative</td>
<td>1 disagreement</td>
</tr>
<tr>
<td>Intrinsic; general v Extrinsic; general own P.</td>
<td>1 disagreement</td>
</tr>
<tr>
<td>Vicarious; illustrative v Extrinsic; general own P.</td>
<td>2 disagreements</td>
</tr>
</tbody>
</table>

It is noticeable that eight of these twelve problem statements were in some way associated with the intrinsic general category. This category continued to be a problem when I compared my categorisation with the other judge's categorisation of the 20% sample. There were 27 statements in the sample and we disagreed on the categorisation of 10 (37%), deciding that the content of two statements did not reflect experience of relevance. Six of the 10 disagreements involved the intrinsic general category.

The disagreements were as follows:

<table>
<thead>
<tr>
<th>Disagreement Type</th>
<th>3 disagreements</th>
</tr>
</thead>
<tbody>
<tr>
<td>General v Specific disagreements:</td>
<td>3</td>
</tr>
<tr>
<td>Intrinsic; general v Intrinsic; specific</td>
<td>2 disagreements</td>
</tr>
<tr>
<td>Extrinsic; general own P. v Extrinsic; specific own P.</td>
<td>1 disagreement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intrinsic v Vicarious disagreements:</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic; specific v vicarious; illustrative</td>
<td>1 disagreement</td>
</tr>
<tr>
<td>Intrinsic; general v vicarious; illustrative</td>
<td>1 disagreement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intrinsic v Extrinsic disagreements:</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic; general v extrinsic; general own P.</td>
<td>3 disagreements</td>
</tr>
<tr>
<td>Intrinsic; specific v extrinsic; general own P.</td>
<td>1 disagreement</td>
</tr>
</tbody>
</table>

Also:

Extrinsic; general other person's P. v extrinsic; general own P. | 1 disagreement |
I rechecked my own categorisation and the disagreements were reduced to 12% and when the other judge rechecked his, the figure was reduced to 4%.

My difficulties with the intrinsic general category seemed to be associated with the students' existing knowledge of physics, as this sometimes made it difficult to determine whether the students were experiencing the relevance of the content intrinsically or extrinsically.

The following statement illustrates my problem:

"I was just sort of following what he was saying, I think I already had at least an idea of what it was so, I umm, I don't think there was anything special, except what's next ...... I did write notes, just to make sure, and be sure that I haven't lost the notes I thought I knew, and to make sure I do really know, so I took notes."

I first of all reasoned that the student had recognised the material, and therefore, must be experiencing the relevance of it intrinsically. But I then realised he did not seem to recognise it in a way that had meaning and reality to himself. The recognition remained extrinsic to the student and, therefore, the statement was better placed in the extrinsic general own perspective category.

On the other hand, the following statement seemed to indicate that in this case the material did have a general intrinsic meaning and reality to the student:

"Maths I think I need to go to and his (the applied physics and energy lecturer's) I think are interesting, it's that way. I've found that I've done quite a bit of that before, though not in such detail. Though I couldn't remember all of it without being reminded and reading it up again because we covered it first time around pretty sketchily."
Having been alerted to this problem and appreciating how the above statements did differ I decided to have another look at all the statements that I had categorised as intrinsic general.

There were 14 more such statements and I now had doubts about four of them. I, therefore, asked the other judge to categorise these. He found all four statements rather difficult to categorise but decided ultimately to make all four extrinsic specific, own perspective. I also now felt this was the most appropriate category for these statements. The following is a good illustrative example:

"Just because the impedance of one wire going to another one is the same, to say there's no reflection, I find that, well it takes a bit of thinking about really. I mean I didn't have time to think about it in the lecture and I haven't thought about it since then because I haven't done any questions on it."

6.4.2. The taped statements

The difficulties I had in categorising the transcribed statements did not seem to occur when analysing the 63 statements from tapes.

There were only four differences between my first and second attempts at categorising. There was also, once again, a further statement which I categorised similarly but felt uneasy about. I believed the statement was intrinsic specific. A further seven statements, chosen at random, made up the 20% sample.

The four statements where I differed were as follows:

Intrinsic v Vicarious: 3
Intrinsic; specific v vicarious; illustrative
Intrinsic; specific v vicarious, perceived
Intrinsic; general v vicarious; illustrative

Vicarious v Extrinsic: 1 disagreement
Vicarious; perceived v extrinsic; general other person's P. 1 disagreement
The judge disagreed with four (33%) of my final categorisation of the statements in the 20% sample.

The four differences were as follows:

Intrinsic; specific v Extrinsic; general own P. 1 disagreement
Extrinsic; general other person's P. v Vicarious; illustrative 1 disagreement
Extrinsic; general other person's P. v Extrinsic; general own P. 1 disagreement
Extrinsic; general own P. v Extrinsic; specific other person's P. 1 disagreement

Three of these four disagreements were from the seven statements chosen at random. I asked the judge to reconsider his categorisation of them and, on reflection, he re-categorised all three in the same way I had originally done. We also agreed, after discussion, upon the categorisation of the fourth statement.

6.5 Results of the Analysis

Table 6.2 summarises the results of the analysis of the EAPP students' statements. As before, I have calculated the proportion of each student's total statements occurring in each category. The table also shows the date of the lecture, whether it was primarily a physics or energy lecture and whether or not it was fully transcribed.

Table 6.3 groups together all statements occurring in each of the three levels of experience of relevance.

Examination of Table 6.3 shows that the two students who had a low priority perception of the course (2 EAPPS and 6 EAPPS) were two of the students scoring highest extrinsic scores - along with 7 EAPPS the student who professed an inherent dislike of physics.

2 EAPPS, nonetheless, had a relatively high intrinsic score, which possibly reflects his existing, though self-confessedly weak, knowledge of physics.
Table 6.2.

<table>
<thead>
<tr>
<th>Student</th>
<th>Date of Lecture</th>
<th>Percentage of total statements in each category</th>
<th>Total Number of Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1EAPPs</td>
<td>Interviewed 2/3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2EAPPs</td>
<td>P 16/2 8/3</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>E*</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>3EAPPs</td>
<td>P 16/2 8/3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>E*</td>
<td>8.3</td>
<td>-</td>
</tr>
<tr>
<td>4EAPPs</td>
<td>P 9/2</td>
<td>5.9</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>E*</td>
<td>9/2</td>
<td>-</td>
</tr>
<tr>
<td>5EAPPs</td>
<td>P 2/3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>E*</td>
<td>2/3</td>
<td>-</td>
</tr>
<tr>
<td>6EAPPs</td>
<td>E 2/3</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>E*</td>
<td>8/3</td>
<td>5</td>
</tr>
<tr>
<td>7EAPPs</td>
<td>P 9/2</td>
<td>7.1</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>E 1/3</td>
<td>11.1</td>
<td>-</td>
</tr>
<tr>
<td>8EAPPs</td>
<td>P 16/2</td>
<td>7.7</td>
<td>-</td>
</tr>
<tr>
<td>9EAPPs</td>
<td>E 2/3</td>
<td>11.1</td>
<td>-</td>
</tr>
</tbody>
</table>

P = Physics Lecture  
E = Energy Lecture  
* Not fully transcribed sessions
## Table 6.3.
Percentage of Students Statements at Each Level

<table>
<thead>
<tr>
<th>Student</th>
<th>Date of Lecture</th>
<th>Extrinsic Level 1 - 4</th>
<th>Vicarious Level 5 and 6</th>
<th>Intrinsic Level 7 - 8</th>
<th>Total Number of Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1EAPPS</td>
<td>2/3</td>
<td>-</td>
<td>-</td>
<td>100</td>
<td>3</td>
</tr>
<tr>
<td>2EAPPS</td>
<td>16/2 P</td>
<td>30.0</td>
<td>-</td>
<td>70.0</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>*8/3 E</td>
<td>40.0</td>
<td>-</td>
<td>60.0</td>
<td>5</td>
</tr>
<tr>
<td>3EAPPS</td>
<td>16/2 P</td>
<td>30.3</td>
<td>8.7</td>
<td>61.0</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>*8/3 E</td>
<td>25.0</td>
<td>8.3</td>
<td>66.7</td>
<td>12</td>
</tr>
<tr>
<td>4EAPPS</td>
<td>9/3 P</td>
<td>23.5</td>
<td>5.9</td>
<td>70.6</td>
<td>17</td>
</tr>
<tr>
<td>5EAPPS</td>
<td>9/2 P</td>
<td>14.3</td>
<td>14.3</td>
<td>71.4</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>2/3 E</td>
<td>8.3</td>
<td>8.3</td>
<td>83.3</td>
<td>12</td>
</tr>
<tr>
<td>6EAPPS</td>
<td>2/3 E</td>
<td>25.0</td>
<td>25.0</td>
<td>50.0</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>*8/3 E</td>
<td>10.0</td>
<td>10.0</td>
<td>80.0</td>
<td>20</td>
</tr>
<tr>
<td>7EAPPS</td>
<td>*9/2 P</td>
<td>28.6</td>
<td>28.6</td>
<td>42.9</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>1/3 E</td>
<td>44.4</td>
<td>22.2</td>
<td>33.3</td>
<td>18</td>
</tr>
<tr>
<td>8EAPPS</td>
<td>16/2 P</td>
<td>23.1</td>
<td>7.7</td>
<td>69.3</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>1/3 E</td>
<td>44.4</td>
<td>11.1</td>
<td>44.4</td>
<td>9</td>
</tr>
</tbody>
</table>

Average score | 24.8 | 10.7 | 64.5  
Average Score of Earlier lecture | 25.0 | 10.8 | 64.2  
Average Scores of Later Lectures | 24.6 | 10.6 | 64.7  
Average Scores for 'Physics' lectures | 25.0 | 10.9 | 64.2  
Average Scores for 'Energy' lectures | 28.1 | 12.1 | 59.7  

P = Physics Lectures  
E = Energy Lectures  
* = Not fully transcribed sessions.
7 EAPP's scores were more evenly balanced across the three levels. This could reflect a gradual change from an extrinsic to more intrinsic experience. The transition may have been facilitated by the opportunity and ability to experience vicariously. This line of reasoning would tie in with 7 EAPP's references to the use of films and illustrations and her appreciation of the opportunity to see the application side of the physics.

3 EAPP also had a comparatively high extrinsic score, which possibly reflected his rather split attitudes to the course and, particularly, the physics strand: notably, he had his lowest extrinsic and highest intrinsic score for the recall of an energy lecture. One might have expected his interest in energy to lead to a higher vicarious score for the physics lecture than is the case.

Students 4 EAPP, 5 EAPP, 6 EAPP and 8 EAPP all had predominantly high intrinsic scores, with some extrinsic and some vicarious experience of relevance. The main exception was 6 EAPP on 2/3 lecture, where he had an above average vicarious score. With this one exception, these students scores confirmed intrinsic experience of relevance, together with an on-going awareness of assessment demands, that were suggested in the description of their orientation towards the course (Section 6.3).

1 EAPP's perceived relevance of the course, particularly the energy strand, was reflected in his high intrinsic score.

Thus the pattern of scores did differ between students and discriminated students like 2 EAPP, who designated the course as low priority, from students such as 5 EAPP, who did not.
6.6 Discussion of Results

The single most striking feature in the EAPPS results is the high degree of intrinsic experience of relevance. The average intrinsic score (64.5%) is higher than for both the microbiology students (55%) and the research method, human science students (56.3%). This is in spite of the apparent feeling of uncertainty about the usefulness and relevance of the course - or, arguably, because of it since the low priority status felt by some students may have facilitated intrinsic experience by virtue of a reduction of concern for external demands. Moreover, the energy strand, for which there was greater perceived relevance than the physics strand, stimulated fewer intrinsic scores (albeit only slightly).

There was scarcely any difference in the average intrinsic scores for the later as opposed to earlier lectures. What is more, the apparently more extrinsically inclined students - 2 EAPPS and 7 EAPPS - both had higher intrinsic scores for the physics than for the (less familiar) energy lectures.

All of the above could, arguably, be partly as a result of the students' existing background knowledge and experience of physics: their familiarity with the subject allowing the majority of them to experience it intrinsically. That they did so to an even greater extent than the microbiology or human science students could be due to the different nature of their background knowledge. The EAPPS students were doing a course which, for the most part, went over their existing knowledge or did so at greater depth; the microbiology students and human science students, on the other hand, had a knowledge of or familiarity with the subject which was more background to their course.
An element of illustrative vicarious experience of relevance, as a consequence of the appreciation of the relevance of the energy strand, may also have contributed to the EAPPS intrinsic scores. Although the vicarious scores were generally low (see Table 6.2) the vicarious illustrative did tend, for at least some students, to be higher for the physics than for the energy lectures.

With the exception of 5 EAPPS and 7 EAPPS, who were both in the lecturer's tutorial groups, there was notably little vicarious perceived experience of relevance, i.e. where a lecturer's perceived enthusiasm or interest is apparently transferred to the students. Most students, like the research method home economics students, did not have the lecturer as their tutor and, like the home economics students, recorded low vicarious perceived scores.

Table 6.2 also shows that extrinsic experience of relevance tended to be general rather than specific. This is similar to the intrinsic microbiology students, and again seems appropriate to an unseen assessment system.

That quite a lot of this general extrinsic experience was from 'the other person's perspective' may reflect the fact that, as first-years, the students had slightly less certainty than, say, the microbiology students about their approach.

In summary, then, I think the results show that the categories did discriminate between the students in a meaningful way. Although, there was apparently much intrinsic experience of relevance, it was still possible to distinguish which students tended to be relatively more extrinsic. The results also showed the greater tendency towards vicarious and, particularly, vicarious perceived experience among the two students who had additional contact with the lecturer.
It is again interesting to compare the students' final grades for the course with their amount of extrinsic experience. Examination of Table 6.4 shows a very close, inverse relationship between extrinsic scores and final grade. There is one possible exception in 5 EAPPS, whose overall grade would have, in fact, been much higher had she not done so poorly in the first January multi-choice examination obtaining a grade 6.

Table 6.4.
Students' extrinsic scores and final grades

<table>
<thead>
<tr>
<th>Student</th>
<th>Average Extrinsic Score</th>
<th>Final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 EAPPS</td>
<td>44.4</td>
<td>5</td>
</tr>
<tr>
<td>7 EAPPS</td>
<td>36.5</td>
<td>4</td>
</tr>
<tr>
<td>2 EAPPS</td>
<td>35.0</td>
<td>5</td>
</tr>
<tr>
<td>3 EAPPS</td>
<td>27.7</td>
<td>3/4</td>
</tr>
<tr>
<td>4 EAPPS</td>
<td>23.5</td>
<td>2</td>
</tr>
<tr>
<td>8 EAPPS</td>
<td>23.1</td>
<td>1</td>
</tr>
<tr>
<td>6 EAPPS</td>
<td>17.5</td>
<td>1</td>
</tr>
<tr>
<td>5 EAPPS</td>
<td>11.3</td>
<td>2</td>
</tr>
<tr>
<td>1 EAPPS</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

The most significant result that seems to have come out of this case study is the importance and influence of (at least perceived) background knowledge of and familiarity with the material. The students' perceptions of their knowledge and familiarity went, as I have already said, beyond what one could describe as background, and, as such, it may not be typical (or even ideal) of students on most courses. It did, nevertheless, seem to be closely associated with the high degree
of intrinsic experience, emphasising again the necessity and importance of having some kind of recognizable, existing, framework into which the material can be meaningfully fitted before intrinsic experience can occur.

In comparison, the teaching and learning context did not seem such a powerful influence on these students. However, the prevailing view that the course was not very important assessment-wise (and was not found to be that difficult anyway) may have contributed to the students feeling freer, or more able, to experience the relevance intrinsically. The common view that the energy was both interesting and of general relevance may also have contributed to the high degree of intrinsic experience.
CHAPTER SEVEN

SUMMARY OF THE THREE CASE STUDIES RESULTS
7.0 Introduction

In this chapter I shall pull together the findings from the three case studies about how students experience the relevance of the content of lectures and about some of the possible influences upon their experience. One of the influences to which I shall refer is the lecturer, but I shall examine more closely in the following chapter students' perceptions of the lecturer and how this relates to their experience.

I intend first to discuss the three levels of experience of relevance and the 8-category system which, I believe, allowed me to discriminate in a meaningful way between different students' experience of the relevance of the content. I will then look at some of the possible influences upon students' experience of relevance that have emerged. In this respect I will look, in particular, at:

1) The influence of the teaching and learning context, with particular reference to:
   a) students' perceptions and perspectives;
   b) teacher characteristics and teaching style and perceptions of these

2) The influence of students' perceived background knowledge of and familiarity with the subject.

7.1 Levels of Students' Experience of Relevance

I found that students' experience of lecture relevance was not a straight-forward matter of either experiencing something as relevant or not. I found that they generally experienced something as relevant but this varied qualitatively. It seemed to me that there were
primarily three levels at which a student could experience relevance:

These were: extrinsic
vicarious
intrinsic

An experience of relevance was extrinsic when students seemed to regard the content only from the point of view of achieving some external demand upon them, generally that of assessment.

A vicarious experience of relevance was where either the lecturer's perceived interest or enthusiasm for something was transferred to the student or, in discussing a particular point, the lecturer provided an illustration, example etc., which the student seemed to recognise and identify with.

An intrinsic experience, on the other hand, was where the student was apparently able to see, for himself, the meaning the content had for his own understanding and thinking.

Thus, each level of experience of relevance was qualitatively quite different. Within each level, there again appeared to be different ways of experiencing relevance, and I developed eight categories to help me identify how each student was experiencing relevance. The eight categories thereby formed a coding system for students' statements.

The extrinsic level of experience could be split into four categories:

(1) Extrinsic; other person's perspective, general
(2) Extrinsic; other person's perspective, specific
(3) Extrinsic; students' own perspective, general
(4) Extrinsic; students' own perspective, specific
Statements in categories one and two indicated that the lecture content was being regarded from the point of view of
(a) fulfilling some external demand; and
(b) how the student thought the other person (e.g. the lecturer) would expect or want the demand(s) achieved.

In the general case, the student simply recognised the material's potential usefulness to, for example, assessment requirements but did not relate it to any specific requirement or demand. In the specific case, the student actively considered how, where or for which particular external need the material might assist him. Categories 3 and 4 are similar to 1 and 2 except the student no longer considers how the other person would expect or want the external demand fulfilled. Instead, the student regards the content from the perspective of how he (or she) sees himself fulfilling the demand and the materials potential to assist him. The difference between the general and the specific case is equivalent to that for categories 1 and 2.

The next two categories of the system were descriptive of students' statements that seemed to reflect a vicarious experience of relevance. They were:
(5) Vicarious; perceived
(6) Vicarious; illustrative

Statements in category 5 were those that referred to perceived lecturer's interest and/or enthusiasm for the content which was apparently transferred to the student. Category 6 statements reflected the student experiencing vicarious relevance, through identifying with, or finding interesting, examples, illustrations or descriptions of experience used by the lecturer. This was irrespective of whether or not the student could relate to the point being put across or illustrated.
The last two categories were descriptive of students' statements reflecting an intrinsic experience of relevance. They were:

(7) Intrinsic; general
(8) Intrinsic; specific.

In the general case, the student appeared to recognise that the material had some sort of meaning and reality for his way of thinking, but he did not actively think through the exact implications. In the specific case, however, the student seemed to be actively relating the content to his own understanding and framework of thinking, working through the implications.

7.2 The Meaningfulness of the 8 Categories.

I developed the 8-category coding system to help me identify how different students experienced the relevance of the lecture content. For the system to be able to do this it had to discriminate in a meaningful way between students' experiences. That the system achieved this is supported by the following four points:

(1) The pattern of experience of relevance that emerged through applying the category system to each student's statements was in fairly close agreement with the description of each student's general orientation towards the course and lectures. For example, those students such as 1 H.Sci, 1 and 3 ESS, 1 MB and 2 and 9 EAPPS (plus all the home economics students) who were described as having an assessment orientation towards their courses all had more statements in the extrinsic categories than students such as 3, 4 and 5 H.Sci, 4, 6 and 7 MB and 6 and 8 EAPPS, all of whom seemed less preoccupied with assessment. Similarly, students who particularly referred to the lecturer's interest and enthusiasm,
such as 2 H.Sci, 3 and 5 Ho Econ and 7 EAPPS, tended to have more
than the average number of statements in the vicarious categories 5 and
6.

(2) Statements that reflected extrinsic experience of relevance,
particularly from predominantly intrinsic students, generally reflected
the extrinsic categories that seemed the most appropriate for the assessment
system in operation or the course. That is, where the assessment was
an unseen, end-of-course examination, extrinsic statements quite often
tended to be of the general kind. (See, for example, 4, 6 and 7 MB and
6 and 8 EAPPS). On the other hand, where the assessment was continuous
and seen the extrinsic statements were much more likely to be of the
specific kind (see, for example, 3, 4 and 5 H.Sci). This should be
expected: in the case of end-of-course examinations, where the content
is unknown, it would be more difficult for a student to be mindful of
how he intends to answer specific questions; but, in the case of
continuous assessment exercises, as the research method students
carried out, the student is quite likely to be mindful of specific
questions and the material he needs to answer them.

(3) In those situations where one might for various reasons have
anticipated higher levels of intrinsic experience of relevance, there
generally were. For example, research methods is, fairly obviously,
a relevant and important subject for human science students; so,
one might expect them to experience its relevance intrinsically.
Three of the five human science students studied in depth were, in
fact, predominantly intrinsic in their experience; and the whole group
of five had a relatively high average level of intrinsic experience.
Similarly, it is possibly not surprising if students doing a final-year option tend to experience the relevance of the content intrinsically. This was the case with the microbiology students. Even with the EAPPS students, one might have anticipated there being some intrinsic experience of relevance by virtue of the energy strand included for the very reason of trying to make the physics seem more relevant.

(4) Students who had closer contact with the lecturer seemed to have a greater tendency towards vicarious experience. (See, for example, 5 and 7 EAPPS as opposed to the other EAPPS students). One might assume that for vicarious experience of relevance to occur to any extent a student needs to have a positive perception of the lecturer. Also, it seems reasonable that the more a student 'knows' a lecturer the more positive his perception might become (See Chapter 8). That students who knew the lecturer best tended to record greater amounts of vicarious experience seems to offer support to the meaningfulness of Categories 5 and 6.

It is also appropriate to mention here that the eight categories were able to differentiate between those microbiology students who apparently experienced the relevance of the content intrinsically, in association with practical everyday experience, and those who did so in association with both practical everyday experience and academic experience (understanding, knowledge and interest). The former students recorded higher vicarious scores than the latter.

7.3 Students' Experience of Relevance and Learning Outcomes

My focus in the three case studies was upon an examination of the process of learning and, in particular, the experience of relevance.
It was not concerned with learning outcomes. Thus, I did not check the students' recall of lecture content for accuracy and did not attempt to test what they had learnt. I did, however, make use of the final grades each student received for each of the course. I assumed these grades would give some indication of each students' learning; and while I do not suggest that the lectures were responsible for any examination success, or failure, it is interesting to note that students who were predominantly intrinsic in their experience of relevance were generally the ones who obtained the higher grades. (See Tables 5.5 and 6.4). The main exceptions to this were the research method home economics students. As Table 7.1 shows, the most extrinsic student in the group (1 Ho. Econ) was fourth for the course while the least extrinsic student (3 Ho. Econ) was only 13th. It will be recalled, however, that all the home economics students tended to be extrinsic in their experience of relevance and, as I will discuss again below, the most successful students in this group were possibly the ones who had best developed work styles effective with extrinsic experience.

7.4 Influences Upon Students' Experience of Relevance

I identified several important influences on the students' experience of relevance. In no circumstance, however, do I suggest that any one factor by itself led students to experience relevance in a particular way.

7.4.1. The Teaching and Learning Context

In Chapter 3 I emphasised the importance of looking at students' experience within the teaching and learning context of which it occurs. In the introduction to the first case study (Chapter 4,
The research method students listed, in their groups, according to experience of relevance scores. The first listed student in each group is the most extrinsic student. The second column shows the students' final position for the course.

<table>
<thead>
<tr>
<th>Student</th>
<th>Final Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 H. Sci.</td>
<td>13th out of 13</td>
</tr>
<tr>
<td>2 H. Sci.</td>
<td>9th out of 13</td>
</tr>
<tr>
<td>3 H. Sci.</td>
<td>Equal 3rd</td>
</tr>
<tr>
<td>4 H. Sci.</td>
<td>Equal 3rd</td>
</tr>
<tr>
<td>5 H. Sci.</td>
<td>Equal 3rd</td>
</tr>
<tr>
<td>3 Econ.</td>
<td>16th out of 22</td>
</tr>
<tr>
<td>1 Econ.</td>
<td>7th</td>
</tr>
<tr>
<td>4 Econ.</td>
<td>11th</td>
</tr>
<tr>
<td>2 Econ.</td>
<td>6th</td>
</tr>
<tr>
<td>1 Ho. Econ.</td>
<td>4th out of 27</td>
</tr>
<tr>
<td>4 Ho. Econ.</td>
<td>18th</td>
</tr>
<tr>
<td>2 Ho. Econ.</td>
<td>1st</td>
</tr>
<tr>
<td>5 Ho. Econ.</td>
<td>5th</td>
</tr>
<tr>
<td>3 Ho. Econ.</td>
<td>13th.</td>
</tr>
</tbody>
</table>
Section 4.0, using Parlett and Hamilton's notion of the 'learning milieu', I described how every context had its "own unique pattern of circumstances, pressures, customs, opinions and work styles which suffuse the teaching and learning that occur there" (Parlett and Hamilton op.cit.) and how this depended, amongst other things, on 'individual teacher's characteristics' and 'students perspectives and preoccupations'. First, I would like to consider this last mentioned aspect of the teaching and learning context of the three courses then, I shall look at those aspects associated with teachers' characteristics.

a) Students' perspectives and preoccupations: The strongest evidence for the influence of this aspect of context on students' experience of relevance came from the research methods course. On this course, I suggested that the teaching and learning context was different for each of the three groups of students taking the course. Certainly, the prevalent ideas about the course varied between each of the three groups; the human science students apparently accepted quite readily the course's relevance and value, the economics social science and statistic students were less inclined to do so and the home economics students were openly doubtful about the relevance of much of it.

It was the norm rather than the exception for home economics students to take courses outside their own department and to have to cope with doing subjects that they had little familiarity with and could not always see the relevance of. In such circumstances it might well be that these students frequently experienced the relevance of their courses extrinsically and consequently, the most 'successful' students might be the ones who best developed work styles that were effective with extrinsic experience of relevance.
The results would appear to support this hypothesis. That some of the students, notably 3 Hc. Econ, came with time to experience relevance more intrinsically would not have too great an effect on grades because assessment was on a continuous basis. The one student, 5 Hc. Econ, who did initially experience relevance intrinsically, albeit decreasingly so over time, was among the higher graded students.

The applied physics and energy course is quite interesting with respect to the influence of students' perceptions and perspectives. There was, on the one hand, the feeling of uncertainty about the usefulness and specific relevance of the course; and, on the other hand, there were both the high acceptance of the general relevance and interest of the energy strand and also the belief that the course was not so important from an extrinsic, assessment, perspective. These last two factors may have counter-balanced any negative effects of the first. Alternatively, there may have been other factors, outside the teaching and learning context, which were strong enough to overcome any negative effects of uncertainty and so help to maintain the amount of intrinsic experience which, it will be recalled, was high on this course.

The data from the applied physics and energy course gave less support for the idea of the influence of students' perceptions and perspectives than that from the research methods course. Similarly, the microbiology course, while in no way negating such influence, offered little extra evidence or illumination.

b) Lecturer characteristics and teaching style:

One of the most significant findings to emerge from the microbiology case study was support for the belief, originally expressed in
Chapter 4, that good vicarious experience can lead to intrinsic experience, and that the lecturer is thus able to facilitate intrinsic experience of relevance where it may not otherwise have occurred.

The lecturer of the microbiology course had a highly vicarious style of lecturing yet, it will be recalled, there was not an exceptionally high amount of vicarious experience recorded. There was, however, much intrinsic experience which frequently seemed closely related to the lecturer's 'vicarious presentation' or, at least, vicarious experience. That this was the case for some of the students is supported by the results for 1 MB, 5 MB and 8 MB. For one lecture (18/1) their scores would suggest that the lecturer did not, for them, achieve her usual level of vicariousness. All three scores reflected very little vicarious experience but much extrinsic experience. However, for a later lecture (28/1) both 1 MB and 8 MB scored both higher vicarious and intrinsic scores. Similarly, 5 MB scored both higher vicarious and intrinsic scores for an earlier lecture (7/12). Thus it was for those lectures where they scored higher vicarious scores that all three scored there higher intrinsic scores; when they failed to record much vicarious experience they all scored high extrinsic scores.

It was also suggested in Chapter 4 that higher scores of vicarious experience seem often to be associated with a kind of transitional stage through which students tend to move either towards intrinsic experiencing (e.g. 3 H. Econ) or extrinsic experiencing (e.g. 1 H. Sci, 2 H. Sci and 5 MB). It was also suggested that 7 EAPPS was in such a transitional state.

Teacher facilitation thus becomes particularly important for such students if they are to be helped to experience the relevance intrinsically.
There was evidence from all three case studies that personal perceptions of the lecturer were important and contributed to both vicarious perceived, and intrinsic experience of relevance. The extent of this contribution will be examined in greater detail in Chapter 8. At present, I will restrict myself to the observation that for both the research methods and applied physics and energy courses the students who knew and had contact with the lecturer recorded higher levels of vicarious perceived experience than the students who did not. All the microbiology students had contact with the lecturer; it is interesting to note that the student whose final year project the lecturer was supervising (5 MB) scored the highest vicarious perceived score for that group.

7.4.2. Perceived Background Knowledge and Familiarity

Evidence that perceived background knowledge and familiarity was important came from all the case studies. It would seem, quite obviously, that before students can experience the relevance of the content intrinsically they must have an existing framework into which they can fit the material. In the absence of such a framework, or of help in establishing one, they have no choice but to be extrinsic in their experience.

This seems initially to have been the case with the research methods home economics students who perceived themselves to have low background knowledge and also tended to experience the relevance of the content extrinsically. This tendency declined with time, presumably as their background knowledge increased. Similarly, economics social science and statistics students 1 ESS and 3 ESS, who both perceived themselves to have little background knowledge and familiarity, recorded the two highest extrinsic scores in this
Group (the human science students who did not have this perception had higher intrinsic scores). 2 ESS, on the other hand, did have a background knowledge of the subject and apparently was able to experience the relevance intrinsically, despite being rather assessment orientated towards the course.

Further support for the importance of perceived background knowledge and familiarity came from the applied physics and energy course. Here, the EAPPS students' perceptions of their background knowledge was unusually high, as was their amount of intrinsic experience. This was in spite of their doubts about the usefulness and specific relevance of the course. For example, 4 EAPPS commented that he could not altogether see how the course fitted in with his other courses. However, he felt very familiar with the content and did produce a high amount of intrinsic experience. Further, although the relevance of the energy strand of the course seemed to be perceived as higher than that of the physics strand, it was on the apparently more familiar material of the physics lectures that the highest amounts of intrinsic experience were recorded. Finally, unlike the home economics students, there was little difference in the amount of intrinsic experience recorded between the earlier and later lectures. This also applied to the microbiology students who, as one might expect of final-year students, seemed to perceive themselves as having existing background knowledge of the subject.

Having, in this Chapter, discussed the qualitative differences in the way students can experience the relevance of a lecture (and the subject) and also some of the possible influences upon their experience, I intend, in the next Chapter, to look closer at the influence of students' perceptions of the lecturer upon both their experience of relevance and their thoughts during the lectures.
CHAPTER EIGHT

THE INFLUENCE OF THE LECTURER ON STUDENTS' EXPERIENCE
CHAPTER 8: THE INFLUENCE OF THE LECTURER ON STUDENTS' EXPERIENCE

8.0 Introduction

In the pilot study, described in Chapter 2, I found two factors in particular that seemed important influences upon the way the different groups of students felt about the research methods course. These were:

1) How well they knew the lecturer
2) How much previous experience they had with the lecture subject.

Further evidence that these two factors are important influences on students' experience of the relevance of the lectures was given in later chapters and again indicated in the previous chapter.

In this chapter, I want to examine in more detail the first factor - knowing the lecturer. I shall also examine the whole question of the lecturer's role and the influence that teaching styles and characteristics have upon students' approaches and thinking in lectures.

The idea that the way students perceive their lectures is an important influence is not new. Many of the studies on the characteristics or qualities associated with 'good' or 'effective' teaching described in Chapter 1 consistently mention student-teacher relationships or rapport. (See, for example, Hildebrand 1973, Coats, Swierenga and Wickert 1972, and Swain 1977).

At the same time, there are the many text-books advising lecturers on 'effective' teaching styles and strategies. These range from comments from such renowned lecturers as the scientist Michael Faraday...
However, little has been done to examine the possible relationships between, on the one hand, either students' perceptions of lecturers or teaching styles and, on the other, students' approach or response to the subject or lecture material. All that has been done is to correlate teaching characteristics with student achievement. These studies, however, take no account of individual students' perceptions or response to the lectures or lecturer. They consider only mean overall student achievement correlated with mean questionnaire ratings, given for particular lecturing characteristics.

The findings from these studies have been contradictory. On the one hand, McKeachie, Lin and Mann (1971) concluded from their analysis of five studies that classes which rated their teachers high in 'rapport' tended to do better in tests measuring student thinking. On the other hand, the more recent studies by, for example, Frey (1973), Marsh, Fleiner and Thomas (1975) and Centra (1977) have all found that teacher involvement/enthusiasm, accessibility and teacher-student relationship have the lowest correlations with achievement (as measured in their tests).

It is in the actual lecture that one might expect teaching characteristics and style to be their most potent. For it is then that the student is face to face simultaneously with the lecturer and the subject. So perhaps it would be more useful to look at individual students' approach and thinking during the lecture, rather than mean overall achievement scores achieved after hearing the lecture. It can then be seen whether an individual's thinking and approach is related to his perceptions of the lecturer and/or the lecturer's teaching style.
For these reasons I decided to study in more depth, (1) the characteristics and styles of the three lecturers from the three case studies, (2) students' perceptions of the lecturers and (3) the influence of the first two factors on student approach and thinking during lectures. An ideal investigation would comprise a complete Ph.D. study in its own right. Thus what I did (and what is described in this chapter) was to explore and start to develop some appropriate methods of research and analysis for examining such factors.

For most of this part of the research I used data I had already collected in the three case studies. In particular, that from participant observation of the lectures and the stimulated recall sessions. In addition, as explained in Chapter 3, I attempted to examine students' perceptions of the case study lecturers by using repertory grid technique. I will briefly describe again these methods and the data that I used from them in this part of my study.

8.1 Stimulated Recall and Participant Observation

Stimulated recall, as explained in Section 3.3, is a technique that was originally used by Bloom and later refined by Siegal et al. It involves taping a lecture and then, within 24 hours, playing back extracts to the student. After listening to each extract the student is asked to recall, as accurately as possible, what he was thinking at that point, during the lecture.

Bloom (and, similarly, Siegal et al.) coded students' thoughts according to their nature and relevance to the subject being discussed. Bloom's system reflects his taxonomy of cognitive skills. The system went some way towards describing student thought-processes during the lecture
and I used his and Siegal's system as a starting point for my own study of student thoughts and approach to lectures. Table 8.1 shows Bloom's version of the coding system.

Table 8.1: Bloom's Coding System For Students' Thoughts

Irrelevant Thoughts

Thoughts about persons, objects, and events not in the classroom environment.

Tangential thoughts about words and phrases used in the lecture.

Relevant Thoughts

Passive thoughts about the subject.

Thoughts evidencing simple comprehension of the subject.

Thoughts involving attempt to apply and utilise the subject matter.

Thoughts involving attempts to find solutions to problems and synthesise the subject.

Thoughts involving evaluation of the meaningfulness and accuracy of the lecture.

The choice of extracts to play back to students was important. The extracts I played, as previously explained (Chapter 3), were chosen by me in a way not dissimilar to Siegal but primarily on the grounds of what I had observed to be characteristic aspects of the lecturer's styles of presentation. I had sat in on the lectures for the previous term and, therefore, felt able to make these selections with reasonable confidence.

8.1.1. Observation of the Lectures.

In my observations of the lectures I used initially the framework outlined by Carrol, who concentrates on what she terms the
'mechanical aspects of teaching' (Section 3.3). However, with time and greater experience I developed a coding system of my own for observing and recording characteristic aspects of each of the case study lecturer's presentations. I developed the system primarily to facilitate my identification of critical incidents to play back to students. (The system was developed for these lecturers and this purpose; whereas it may be applicable to other lecturers, it is not intended to cover all possible lecturing styles). The system is summarised in Table 8.2. The table describes only the 'mechanical' observable aspects, the whole lecture experience, obviously, consisted of much more than the summation of mechanical aspects such as these. Each occurred, in each instance, within a particular teaching and learning context and, consequently, was unlikely to be experienced as isolated behaviours by the students or, for the most part, even perceived as such. They would, more likely, be experienced as a part of the whole context. Indeed, they are frequently not even mutually exclusive of one another. It is thus important, when discussing these characteristic aspects, to keep in mind each of the case study contexts from which they derive.
Table 8.2. : Coding System of Aspects of Lecturer Behaviour

<table>
<thead>
<tr>
<th>AVA</th>
<th>Audio Visual Aids</th>
<th>Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVApt</td>
<td>prepared transparency</td>
<td>Cst Communicating to students</td>
</tr>
<tr>
<td>wt</td>
<td>writing on C.R.P.transparency</td>
<td>Cbl Communicating to blackboard</td>
</tr>
<tr>
<td>bl</td>
<td>writing on blackboard</td>
<td>N  Cue for note taking</td>
</tr>
<tr>
<td>S1</td>
<td>slides</td>
<td>Ft  Pause (by the teacher)</td>
</tr>
<tr>
<td>F</td>
<td>film</td>
<td>Rw  Rewording/Rephrasing</td>
</tr>
<tr>
<td>P/D</td>
<td>physical/practical demonstration</td>
<td>DF  Definitions</td>
</tr>
</tbody>
</table>

Illustrations and Examples

| I   | Illustrative example         |
| Ip  | Illustration/description of personal experience |
| CE  | Chatty example               |

Digressions and Asides

| D   | Digressions                  |
| A   | Aside to self               |
| E   | Lecturer distress or exasperation |

| H   | Humour                       |

Although some of these categories can be identified only by direct observation others can be illustrated by extracts from the lectures. It may be useful, here, to illustrate how the categories differ from one another and show more precisely what each represents.

The AVA Categories merely list the different aids adopted by the three lecturers and should need no further explanation. In any case, the medium of this thesis cannot illustrate them as it can the next part of the system.
Three types of illustrations and examples are distinguished in the system, each being used by the lecturers to illustrate their points in a slightly different way. First, the standard 'illustrative example', which is fairly straight-forward.

"So you build in some sort of stratification into the sample, ummm a very simple example might be if you were doing a sample of University of Surrey students, ummm say you wanted to get a sample size of 125 out of, say there were 2,500 students in the university, ummm then our sampling fraction would be, if you cancel that out, would be 1 in 20. Umm, you could take a simple random sample of 1 in 20 university students by picking them out of a hat, as I mentioned last week."

Second, the 'Ip' example, which is similar but comes directly from the lecturer's personal experience.

"The age group which you are studying makes a difference as well. I was studying, well involved in a study of adolescents, young people activity patterns, and we had a refusal rate of only about 4%, which, I mean, is really minimal and it seems that young people between about 14 and 19 quite like to be interviewed they quite enjoy it."

The third type of example is the 'chatty'. This was used by the microbiology lecturer, in particular, and was referred to in Chapter 5. I called the type 'chatty' because of the less academic flavour.

"If you've ever seen your butcher with a nice carcass from Smithfield after the Christmas shows and seen the huge size of these beautiful bullocks, it really does take many hours to get the temperature down."

A 'digression' by definition, is when the lecturer wanders away from the main point. I tended not to record many digressions. I did, however, record what I have termed asides, which were of a similar nature to digressions.

'Aside to Self' were frequently, though not always, associated with some slip or error by the lecturer who, as a consequence, made a comment
almost to him or herself. Thus:

"One umm these factors - can't see that anyway, never mind, - are what Campbell and Stanley talk about in terms of threat to internal validity in an experimental situation."

'Lecturer distress or exasperation' was also most frequently observed when the lecturer had apparently made some kind of slip-up or mistake. Often it was only a visibly recognisable phenomenon, but not always:

"For example, it might be the brighter kinds that go to smaller schools err, it might be the brighter kids that go to schools with smaller classes umm, or something of that nature, would be an alternative explanation which we would have to try and test out, or it might be that classes with smaller, schools with smaller classes, I'm getting extremely confused, err schools with smaller classes tend to be in middle class areas and tend to have middle class kids going to the school and it's this that is causing the association between size of classroom, number of pupils in class and speed of learning."

Although I had a category for 'Humour' it was not frequently used by any of the three lecturers studied.

The communication categories refer primarily to the content of the lectures but also included are two categories referring to who or what the lecturer seemed to be directing his or her presentation. Thus there was 'Communicating to students' where the lecturer was facing the class and talking directly to the students and 'Communicating to blackboard' where he or she was facing the blackboard whilst talking.

'Cue for note-taking' were those incidents where I considered the lecturer to be indicating or emphasising that something was, or was not, important in terms of the students' academic needs. For example,

"The thing to underline, I think here, is it's not always the organism in maximum numbers which can cause the spoilage, so, if you've got a hundred organisms in your sample it is quite often 1 or 2% of the organisms present which can actually cause the spoilage that is significant."
'Pause' (by the teacher) and later, under Student Behaviour
'Pause' (by the students) were easiest observed during the lectures,
particularly student pauses. This latter were the times when the
students were generally listening as opposed to note-taking.

'Rewording/rephrasing' whilst sometimes more apparent in the
context of a whole lecture was also sometimes obvious in short lecture
extracts. For example:

"So that, in other words, no antecedent meaning variable occurs
in time, so in other words, there is no other variable which
could be causing this relationship between the two variables
you are interested in, uum, in other some other variable which
is usually prior to the two variables X and Y."

'Definitions' are, I think, self-explanatory. 'Relevance
Statements' were statements about relevance and importance that were
wider and of a more general nature than the more academic emphasis
of 'Cue for Note-taking' statements. For example:

"I mean, just at that particular instance, I mean there's about,
you know, 20 kilowatt per metre wavefront around this country
average, all the year round. So energy in waves, in the
context of this course, is not insignificant."

'Discussion; Pros and Cons' is where the lecturer discussed the
advantages and/or the disadvantages of something. For example:

"So, because you don't have control over what is actually
produced or the behaviour which you are observing, you tend to
get a high amount of unusable behaviour whereas in an inter-
viewing situation the dose-rate tends to vary with the degree
of structuring of the interview."

'Summary' statements were incidents not always easily recognisable
out of the context of the whole lecture. The last kind of "communication"incident
was those where 'technical information and/or descriptions' were being
given. For example:
"Well, if I look at \( \cos \theta \), \( D \theta \) that is the differential of \( \sin \theta \), so I can take the \( 2\pi \) out and say the integral is \( \sin \theta \), \( D \theta \) is the differential of \( \sin \theta \), we can differentiate \( \sin \theta \) as \( \cos \theta \) \( D \theta \)."

During the above incident the lecturer was also communicating to the blackboard (i.e. facing the blackboard) rather than the students.

I identified three types of teacher questions. The 'technical' was where the lecturer asked for the solution to a problem he or she was posing. For example:

"Could I ask you? If you were faced with a factory handling, umm what, 5000 poultry carcasses per day, which is fairly low numbers in these terms, how would you face thinking about sampling those poultry by a method which would give you some valid results?"

A 'chatty' question was, like the 'chatty example', less academic, generally, more personal:

"Any questions about that? - How many of you have had staff forias food poisoning, those symptoms - one - what was it Paul do you know? (student makes inaudible response) No-one else? You've been well looked after."

A 'checking' question was where the lecturer checked with the students about what they had covered, what their understanding was, etc. For example:

"It's a Joule-Kelvin expansion, is that something you've done quite a lot of? - Pardon? - Alright I'll have a word about it then."

Lastly under student behaviour is included:

'Questions' (from students) but these occurred so rarely I never recorded an example.

As explained, I developed the coding system to help me identify critical incidents for playing back to students in the stimulated recall
sessions. I also found it useful when building up a picture of the three lecturer's characteristic styles of lecturing. Before I describe these, however, I would first like to explain how I attempted to explore further the students' perceptions of their lecturers.

6.2 Repertory Grid Technique

I used Kelly's repertory grid to discover more about students' perceptions of the lecturers because it seemed to be aimed at achieving the kind of things I wanted to achieve. As Fransella and Bannister explain:

"Kelly devised repertory grid techniques as a method of exploring personal construct systems. It is an attempt to stand in others' shoes to see their world as they see it, to understand their situation, their concerns."

(Fransella and Bannister, 1977)

I have already explained, in Chapter 3, the basic assumptions underlying Kelly's personal construct theory and repertory grid technique. While I did not necessarily subscribe to all the assumptions and consequences of the theory, I did believe that the grid was useful for eliciting students' perceptions. It's greatest virtue is that it does allow subjects to describe likeness and differences in their own terms and as perceived by them and, in doing so, it avoids directly eliciting either evaluative or 'ideal' statements about what is being described or perceived. Consequently, I believed it did give some genuine insights into a person's perceptions.

As I explained in Chapter 3, the individual completing a grid compares and contrasts elements in his environment using his own constructs. Thus, in the lecture-feedback project, David McConnell and I asked students
to compare and contrast university lecturers whom they liked or
disliked, according to certain criteria, and thereby elicited
written constructs from them.

The kind of constructs we elicited from the students - to show
how they thought two lecturers were similar to each other but
different from a third - were 'enthusiastic', 'not interested in
students' 'approachable' etc.

I asked the case study student to compare and contrast the following
nine elements:
(1) Self
(2) Mother
(3) Good friend
(4) Lecturer in question
(5) Father
(6) Ideal self
(7) Lecturer who was liked
(8) Lecturer who was disliked
(9) Someone who was disliked

I believed this choice of elements would give me an appropriate
range of the students' perceptions of different individuals against
whom I could compare their perceptions of the case study lecturer's.
They are derived partly from Kelly's own grouping and partly as a
result of the focus of my study being on lecturing and lecturers. By
the choice of elements such as 7, 8 and 9, I biased the subjects towards
using affective constructs ('like', 'dislike'). As I was particularly
interested in students' affective interpersonal perceptions of the
lecturer this seemed acceptable. However, in retrospect, such
perceptions could still have been elicited by less 'affectively'
loaded elements. By using, for example, 'lecturer who was particularly
liked' (or disliked) as elements I fell, to some extent, into the same
trap as previous research that asks students to describe the qualities
of their most liked and disliked lecturers. As Levinthal has shown,
such descriptions are inevitably biased by students' ideas about their 'ideal'. (Levinthal 1971). The students did have to compare these elements, when completing the grid, with none-lecturer elements and, I believe, this would help to ensure that their thoughts were about other, none 'ideal lecturer', aspects as well.

The students completed the grid by comparing and contrasting three elements (or a triad) at a time, say 'mother', 'good friend' and 'lecturer who was disliked'; and writing down in what way they saw any two of the three as being alike and, at the same time, unlike the third. For example, a student might have thought his/her mother and a good friend were both 'friendly' while the lecturer they disliked was 'cold and unfriendly'. In this way a bipolar construct is elicited from the student: the 'emergent' pole is described by the word 'friendly' and the contrasting or 'latent' pole, by the phrase 'cold and unfriendly'.

Each student was asked to consider the same 12 combinations of triads. Thus 12 bi-polar constructs were elicited from each student.

The triads of elements to be compared were selected so as to give each of the nine elements an equal chance of being used. Figure 8.1 shows the grid that the students were asked to complete. The triads of elements to be compared for each row are indicated by circles.

Figure 8.2 is a partly completed grid and shows six of the students' bi-polar constructs.

Once I had elicited the (12) constructs I asked the student to rate each element on a 1 - 5 point scale with respect to each of the bi-polar constructs. The 'emergent' pole of each construct was the (1) and the 'latent' pole the (5) end. Figure 8.2 shows the ratings given by this student for each element on each of the six bi-polar scales shown.
Figure 8.1 Repertory Grid that Students were asked to complete

<table>
<thead>
<tr>
<th></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>'Alike' Column</th>
<th>'Contrast' Column</th>
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Figure C.2. Part of a Completed Students' Repertory Grid  
With the Elements Rated on the 1 - 5 Bipolar Scales.

<table>
<thead>
<tr>
<th></th>
<th>Acceptance of each others point of view</th>
<th>Dogmatic</th>
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<td>2 2 2 4</td>
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<th></th>
<th>Seeking perfection</th>
<th>Carefree</th>
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<th>Boring</th>
<th>Stimulating</th>
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<th></th>
<th>Reassuring</th>
<th>Unpracticable</th>
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<td>4 1 2 5</td>
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<th></th>
<th>Arrogant</th>
<th>Confident</th>
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<td>2 2 4 4</td>
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<th></th>
<th>Failure to communicate</th>
<th>Understanding</th>
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<td>4 5 4 1</td>
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<th></th>
<th>EMERGENT POLE</th>
<th>LATENT POLE</th>
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<td>Elements are 'alike'</td>
<td>Elements in 'contrast' to other two.</td>
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Analysis of Students' Grids

Each student's grid was processed through Patrick Slater's 'Ingrid' computer programme (Slater 1977). The programme identifies the principal components of each grid from the constructs and elements with the greatest variance (most extreme ratings). The first two components of a grid can generally be assumed to represent the main dimensions along which the subject differentiates the elements. The programme provides co-ordinates for all the grid's constructs and elements which can be mapped out in relation to the first two components. This has been done in Figure 8.3.

The meaning of the two components has been deduced from the loadings of the constructs contributing to each, that is, from the constructs which account for the greater amount of the total variation of the component itself. The emergent poles of the most heavily loaded constructs were used to describe the dimensions of each of the first two components.

Figure 8.3 shows the position of each element relative to other elements and to the key constructs. For this student it can be seen that the 'course lecturer' (element 4) is close to both 'lecturer particularly liked' (element 7) and 'good friend' (element 3) and is construed in terms of 'will do anything for anyone' and 'pleasant temperant'. The constructs 'Impatient' and 'Don't respect' are applied more to people disliked (elements 8 and 9).

Similar maps, of the construct systems elicited from each student, were drawn from the analysis of each repertory grid.

I will now describe the results I obtained in this part of the research.
Reproduced and analysed into its Principal Components

Can't express selves very well
Quick tempered.

Will do anything for anyone
Pleasant temperant

Impatient
Don't respect

Smores
Good at explaining

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<th>No.</th>
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<td>Self</td>
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<td>Mother</td>
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<td>3</td>
<td>Good friend</td>
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<td>4</td>
<td>Lecturer in question</td>
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<td>5</td>
<td>Father</td>
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<td>6</td>
<td>Ideal self</td>
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<td>7</td>
<td>Lecturer particularly liked</td>
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<td>8</td>
<td>Lecturer disliked</td>
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<td>9</td>
<td>Someone disliked</td>
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8.3. Lecturer's Characteristic Lecturing Styles

Through my observations, and with the help of the coding system categorising aspects of lecturer behaviour, I compiled the following descriptions with respect to each of the three lecturers.

8.3.1. The Research Methods Lecturer:

The research methods lecturer gave a more or less consistent pattern to the structure of her lectures. Generally, it was a variant of the following outline:

(a) Introduces lecture topic
(b) Gives a description/definition of the methodology(s) to be discussed
(c) Gives a sociological example(s) or study(s) illustrating the type(s) of methodology(s) being discussed
(d) Explains the different types and purposes of the methodology(s) being discussed
(e) Rewording of the basic aspects of the foregoing
(f) Pointing out of assumptions, advantages and disadvantages
(g) Summary of important aspects of foregoing

Throughout her presentation she made frequent use of the overhead projector, either jotting down main points or showing prepared transparencies.

She tended to speak rapidly, pausing infrequently but, as already mentioned, she did reword or rephrase quite a lot.

She sometimes had a tendency to get tied up in knots and, as a consequence, make asides or show lecturer exasperation or distress, as illustrated in the earlier examples.

It was, in fact, only her second year of lecturing and she freely admitted she did not find lecturing as easy as some, commenting

"I don't get my kicks from it."

She rarely asked questions other than of a rhetorical nature, and did not come across as very responsive to her audience. This was
partly, she herself explained, because

"I can only see the front row people, well I can only see their expressions. I can see the images of different people but I can't see if they look as if they are falling asleep or yawning or things like that ..... I mean if people kind of groan or grimace, or something like that, I could not see it, except for the front row people who are kind of keen and attentive sort of thing, so that's a positive response."

Each of the three lecturers seemed more or less aware of their lecturing styles, much of it being apparently deliberate. For example, the research methods lecturer said of her use of examples and illustrations, which tended where possible to be personal:

"I suppose, as one gets more intellectual, one has to come, try to put in things which keeps people's attention more and which they can, you know hang on to, get a bit more interested in. So, I mean something like that (a particular example used) is a bit weird, a bit different, that illustrates the point, more than something else that's a bit more mundane. They might remember it, but hopefully might remember it for the point you were trying to make."

Similarly, she had the following to say on the wording and rephrasing aspect of her style:

"You are trying to teach them to understand something and appreciate something and, I think, the actual wording you use doesn't matter, that's why I think I use different wording. I might say something and then say it again in a different, slightly different way, hopefully you try to alter the wording a bit so it comes more understandable."

She saw her lectures and the course as a whole more in terms of "learning a skill rather than a body of knowledge." Consequently, she did not feel it was necessary that students wrote down everything she said:

"All they need write down, I suppose, is the summary bit. They don't need to write down all my other bits - I hope they write down the gist of things rather than all the words. I'll probably do a little summary bit of what I was saying before I go on to the next thing, and, hopefully, by the tone of my voice and so on they stop this chit chat and sort of thing and hopefully realise this is summary time, right - right, sort of thing, go on to the next subject."
Whether this hope and the others expressed by the lecturer were reflected in students' thoughts during the lecture will be examined later.

8.3.2. The Microbiology Lecturer:

The microbiology lecturer had been lecturing for some 25 years and had a very 'individual' style. She tried (see Chapter 5) to relate much of what she was saying to vivid, easily identifiable descriptions and examples. Many of her examples were 'chatty'. She tried to involve the students by asking frequent questions. She seemed constantly to be 'in touch' with her audience, looking directly and openly at the students most of the time. Her pace was much slower and more relaxed than the other two lecturers. She appeared to take more pauses and speak slower when there was something she expected students to note down. She, frequently, appeared to quicken up a bit when using the additional stimulus of the blackboard or repeating the same point but in a different way.

Transition points in her lectures were marked by both extra pauses and 'chatty-type' comments.

She made few, obvious, slip-ups or mistakes while lecturing and maintained an even flow in her presentation. She didn't make many 'relevance statements', but seemed instead to rely on her illustrations to show the relevance and meaningfulness of what she was discussing. She did, however, summarise quite a lot and make reference to broader implications. This seemed to correspond with her view that she needed to focus on basics rather than detailed information in her lectures:

"What I need to be doing is a principle, rather than too much detailed information, which they can get from the literature if they need to, but it is a principal which will not waste their time to learn now .... you can only start their learning process, you can't tell them everything, but what you can do is to pick out what you feel to be the fundamental basics of the subject."
Like the research methods lecturer much of her style was apparently deliberate. About the asking of questions, she said:

"I know that students find it difficult to accept just plain tables and plain facts and they don't make an impact. If you make them think and try to recall I think this helps them to memorise something."

Similarly, she made the following comments about her use of 'chatty' examples:

"A lecture is to draw on mental pictures, to put over feelings, to make them be in the situations and to add their own professional expertise to that; and then it sticks ........ it's not a matter of just understanding but it's reinforcing their whole appreciation of microbiology, or whatever it is."

She also believed in repeating things:

"I do feel that repeating something is helpful in making a deeper track."

Also:

"When people are taking notes, some way you have got to pace it so they can do this, so again it's fairly deliberate, I think."

Similarly, she remarked that "I do quite deliberately watch the students to see for any reaction." She found it important, in fact, to feel in contact with her audience, to be getting a response and to feel they were going along with her and understanding things.

Despite my remarks about her lack of slip-ups or mistakes, she did make the following comment about one that I did not pick up:

"So that was definitely a weakness that, which I know may not have come over clear, ummm just because one's an old hand at the game."

That, I think, characterises very well the polished, down-to-earth, presentation of this particular lecturer.
8.3.3. The Applied Physics and Energy Lecturer:

Not only were both strands of this course given by the same lecturer: it was also possible to identify a characteristic style for him. Generally, he started his lectures by referring to the relevance of that day's topic to everyday application and by giving a practical illustration of this. He then proceeded to handle particular topics along the following lines:

(a) Refers to diagram on board and gives a verbal description of what he intends to show/prove etc.
(b) Adds various parameters to the diagram whilst talking.
(c) Writes on board what he intends to show.
(d) Does a numerical proof on the board.
(e) Repeats in words what the numbers in the proof represent.
(f) Refers back to the diagram constantly.
(g) Checks with audience on their comprehension - looking carefully around.
(h) Interprets in words proof done so far.
(i) Refers back to diagram to explain what proof has shown.
(j) Gives a practical illustration of the equation proven being applied in practice.

He used the blackboard intensively during his lectures and alternated between speaking directly to the audience and speaking while facing the board. He worked rapidly through derivations and proofs, etc., and, on occasions, made small slip-ups, having to go back to correct himself. He seemed fairly responsive to his audience, frequently checking with them whether they were following or whether they had already covered a particular point.

His lectures included a lot of 'technical' content such as proofs, theories and derivations, but he generally tried to relate these to applied examples on the energy side and to point out the relevance of doing a particular piece of theory.
He used what he wrote on the board to summarise his points and did not tend to reword or rephrase to any great extent. He had a tendency to run out of time and to rush a little at the end of his lectures.

He seemed to be aware of his style of lecturing although, sometimes, more with respect to perceived weaknesses than deliberate strategies. For example, he knew he sometimes excluded the students whilst working on the board but, as he commented, it was very easy to become over-involved with what he was trying to explain.

"If you've got a difficult explanation, if you've got about 3 or 4 things that you've somehow got to fit in and you're also trying to put something upon the blackboard, to summarise it, and in words that you're going to explain you're going to have to talk in greater length than the notes you eventually put up on the blackboard and I think you can get taken up rather too much with what you're writing, in which case there's not sufficient explanation."

He did not openly comment on his running overtime but did remark: "I mean it's amazing how much time you can use up, I find, on simple things."

Some of what he did was, however, more deliberate. For example, about his introduction at the beginning of the lectures, he said:

"I think I do sometimes do something to motivate them and let them see where it's connected err with reality because, I think, with a lot of this material I do seem to be emphasising the way things work and the mechanics or operation of things........... to see how those things do actually fit into some picture."

Also, he saw his blackboard notes as a summary:

"... and the way I use the blackboard is often as a summary of what I've been saying sometimes. I'm, you know, I'm discussing with them and then I put a note down so that, you know, that acts as a summary."

And, finally, with regard to his questions:
"Some of these things are very difficult to tell whether they have met before because they're from school and sometimes it's in other courses ... so, you know, I ask them."

It can be seen that each of the three lecturers had his or her own individual lecturing style and ideas. But what influence did their style and the characteristic aspects of their behaviour in lectures have on student approach and thinking during the lectures? I tried to answer this question by examining the data from the students' stimulated recalls of lectures.

8.4 Analysis of Stimulated Recall Data.

As I mentioned earlier, (Secion 8.2.), I used Bloom's category system as a starting point for analysing students' responses to the critical incidents I played them. I found it necessary, in fact, to expand the system in order to cover all the responses I obtained. Table 8.3 shows my expanded coding system.

In coding students' statements I used only comments which directly concerned their thoughts, feelings and behaviour during the lecture at the time of the extract. I did not use comments which, for example, explained why, later, they thought they had responded/behaved in the way they had, or how relevant they thought the lecture was as a whole. (N.B.: All such comments contributed to assessing their experience of the relevance of the content. See Chapters 4, 5 and 6).

I shall now list an example of statements falling into each of the 12 categories:
Table 6.3.

CODING SYSTEM FOR STUDENTS' THOUGHTS DURING LECTURES

1. Thoughts about persons, objects and events within or without the classroom environment but not associated with the subject matter of the extract.

2. Thoughts about some aspect of the lecturer's dress, appearance, mannerisms, etc.

3. Thoughts about aspects of the lecturer's delivery and behaviour.

4. Thoughts reflecting only partial attention to material in the extract.

5. Tangential thoughts about words, phrases and examples etc., used in the extract.

6. Thoughts about general usefulness and applicability or relevance, to the student, of the lecture as a whole.

7. Thoughts about usefulness, applicability or relevance of what is being said to:
   (i) understanding of subject;
   (ii) work to be done in the near or far future.

8. Thoughts reflecting attention to lecture and extract:
   (i) listening;
   (ii) noting down.

9. Thoughts reflecting attempts to understand subject matter of the extract.

10. Thoughts which involve evaluating the meaningfulness and accuracy of what is being said.

11. Thoughts involving attempts to find solutions to problems or synthesis the subject, including attempts to relate and integrate knowledge.

12. Thoughts where in questions beyond the presentation are asked.
Category 1: Thoughts about persons, objects, events not associated with the extract

"I can't remember that bit, honestly, nothing at all. I must have been miles away, I was definitely miles away, I can't remember that."

Category 2: Thoughts about the lecturer (dress, appearance, mannerisms, etc.)

"I can't remember thinking anything particularly - I had a mental image of Sara's dress. I did think how slim she was and how she can get away with this. Really, it's only because she's female, I always notice her clothes.

Category 3: Thoughts about aspects of the lecturer's delivery and behaviour

"Yeh, doesn't she go on - I know I was thinking that because, oh dear, the people in front started moving about and I looked at my friend who was sitting next to me and she said, 'why doesn't she get on with it'. I thought, that's just what I was thinking. I was thinking, I don't really understand this and she's going on and on and on. Yeh, that's what I was thinking.

Category 4: Thoughts reflecting only partial attention

"Yeh, I was getting very bored then. I remember about doss-rates. Ummm, I think someone was talking, or something, so I got involved thinking about doing something; or somebody beside me was, I think, reading. I remember about doss-rates and writing it up but that's about it."

Category 5: Tangential thoughts about words, phrases and examples etc., used.

"The outstanding thought there was, 'how do you spell assymetrical'. I don't think she was right, I don't think I was right. I've forgotten whether I wanted to put one s or two m's or is it one m, but, you know, the outstanding thought was, how the hell do you spell assymetrical."

Category 6: Thoughts about general usefulness and applicability or relevance of the lecture

"I didn't really know how to take it because, when she first started off, it sounded as if it wasn't really relevant to sociology at all. Well, she said it was more scientific and then added at the end it could also be used in sociology.... I just didn't know how the lecture was going to turn out."
Category 7 (I): Thoughts about usefulness, etc., of what's being said to understanding of subject

"Just thought it was a bit strange, what she was going on about, because I didn't think it was that connected with the subject, I suppose it was."

Category 7 (II): Thoughts about usefulness, etc., of what's being said to work to be done

"Ummm, I took it down, about the best way to act as an observer. It is, I mean, this will help one to know what to do when doing the exercise next time around, telling you what to do when observing, what is important, the way to behave. So you have that feeling that you're going to use it straight away."

Category 8 (I): Thoughts reflecting attention to extract; listening

"Everyone wanted to know, I think, what it was and when he explained it, sort of basics, it was fairly obvious but, at the time, that was fairly new, or so. I thought, so ears pricked up a bit then."

Category 8 (II): Thoughts reflecting attention to extract: noting down

"That was all quite clear and simple actually. I wrote it down. It's all there, it's all quite understandable. I just remember thinking, when I wrote it down, that I had to be careful about nitrate and nitrite and make sure I wrote each one properly otherwise I'd be confusing it, if I didn't, but apart from that I don't remember. All quite clear I think."

Category 9: Thoughts reflecting attempts to understand subject matter

"As she was saying abortion and hanging I thought 'my goodness what do they have in common', I mean, as soon as I thought it, I mean, I knew what the answer, what is the connection, but, of course the connection is the third factor ... but, as she was saying abortion and hanging, my immediate thought was, 'heavens what is the connection', but of course the connection is the third factor. As soon as I thought of that I realised."

Category 10: Thoughts which involve evaluating meaningfulness and accuracy of what is being said

"The only thing was normally for an indicator diagram you do P,V and I wondered why he was doing P against enthalpy, but then he went on to explain why and it seemed fairly obvious."
Category 11: Thoughts involving attempts to find solutions to problems, synthesis the subject

"I thought a bit about that in relation to that girl's project: She was doing chickens and she was having to, well she autoclaved her chicken in order to sterilise it and to add these organisms that she was taking up to it, and I thought, well if she has done that surely her project, it hasn't sort of gone right, because she took them from the chickens originally and she was going to have to replace them to see what sort of spoilage they produced. I thought, if she autoclaved them the constituency of the chicken would be altered in the same way as what the fish would be."

Category 12: Thoughts where in questions beyond the presentation are asked

"I did sort of go off on a little thought track, about this business of divorce and delinquency, and a point about finding out whether the parents were divorced before the delinquent act, because this is another variable that would come into this."

It was possible, using the above categories, to detect the extent a student appeared, at the time of each incident, to be actively involved with the semantic content of the lecture: statements in categories 1 - 3 reflecting non-involvement, in categories 4 and 5 slight involvement, categories 6 - 8 progressively greater involvement, but of an essentially passive nature, and categories 9 - 12 the greatest and most active involvement. Any response in categories 6 - 12 could thus, possibly, be considered more desirable, from a learning point of view, than responses in categories 1 - 5.

Using the twelve categories I coded students' statements myself and then had a second judge check a 25% sample, chosen at random, from each course.

On the research methods course I disagreed with the second judge on 7 out of 32 statements (22%). After discussion we agreed on them all.
On the microbiology course I only agreed with a second judge for 13 of the 25 statements in the sample (50%). After rechecking this rose to 24 (96%).

On the applied physics and energy course I disagreed with a second judge on 7 out of 20 statements (35%). I asked a third judge to categorise these 7 statements and after some discussion with this judge disagreement was reduced to 2 statements (10%).

After a 25% sample of statements had been checked from each of the courses I rechecked my categorisation of all the other statements. I was not too concerned about the discrepancies in categorising the statements because the second judge and I were, generally, within one or two categories of each other, which was sufficiently accurate to get an indication of the students' involvement with the semantic content. As explained above, at a general level, any statements in categories 1-5 reflected less involvement than those in 6 - 12.

The full results of students' thoughts for each of the incidents recalled are shown in appendix C.

8.4.1. The Relationship between critical incidents and students' thoughts

It is difficult to draw conclusions from examining the kinds of thoughts associated with particular incidents. Much must depend, among other things, upon where the incident occurred in the lecture, how it fitted in with what had gone before hand, the general pattern of presentation and, perhaps most important, how an individual student was experiencing the relevance of the lecture. Yet there does seem to be some interesting trends in the pattern of students' thoughts associated with the different types of critical incidents.
Table 8.4 lists the different aspects of the lecturers' behaviour and the average result for students' thoughts obtained for each. Those aspects with the highest average are listed first. The table also lists the number of times incidents of each aspect were played to individual students.

Examination of Table 8.4 shows that both 'Illustration and Example' incidents (I\textsubscript{p}, I and CE) and 'Discussion; Pros and Cons.' (P/C) incidents tended to be associated with thoughts reflecting high active involvement. 'Definitions' (DF) also scored relatively highly.

The applied physics and energy students results reflected the greatest involvement with the content in association with 'writing on blackboard' (AV\textsubscript{AV}), AV\textsubscript{b} incidents tended to be associated with fairly high scores for the other two courses also.

The microbiology students, on the other hand, recorded their highest levels of involvement in association with 'cue for note taking' incidents (N). There were few such incidents on the other two courses and when they did occur were not associated with very high scores.

In contrast, 'relevance statements' (R) tended overall to be associated with low active involvement (with the possible exception of the applied physics students). Similarly, 'rewording/rephrasing' (RW) incidents and those where the lecturer asked questions (\text{Q}_t, \text{Q}_m \text{ and } \text{Q}_c) and gave technical information (T), tended to be associated with low levels. This was also the case with 'asides to self' (A) and 'lecturer distress or exasperation' (E).
Table 8.4 Average Scores for Students' Thoughts

<table>
<thead>
<tr>
<th>Research Methods</th>
<th>Microbiology</th>
<th>Applied Physics &amp; Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Incident</td>
<td>No. of Times Played</td>
<td>Average Score for Students' Thoughts</td>
</tr>
<tr>
<td>Ip</td>
<td>6</td>
<td>8.5</td>
</tr>
<tr>
<td>DF</td>
<td>15</td>
<td>8.3</td>
</tr>
<tr>
<td>F/C</td>
<td>21</td>
<td>8.0</td>
</tr>
<tr>
<td>Ip+H</td>
<td>4</td>
<td>8.0</td>
</tr>
<tr>
<td>I</td>
<td>20</td>
<td>7.9</td>
</tr>
<tr>
<td>S</td>
<td>13</td>
<td>7.9</td>
</tr>
<tr>
<td>CAVA</td>
<td>10</td>
<td>7.7</td>
</tr>
<tr>
<td>AWAwt</td>
<td>8</td>
<td>7.5</td>
</tr>
<tr>
<td>AVAwp</td>
<td>9</td>
<td>7.3</td>
</tr>
<tr>
<td>A</td>
<td>18</td>
<td>7.1</td>
</tr>
<tr>
<td>N</td>
<td>4</td>
<td>7.0</td>
</tr>
<tr>
<td>Qt</td>
<td>2</td>
<td>7.0</td>
</tr>
<tr>
<td>RW</td>
<td>13</td>
<td>6.8</td>
</tr>
<tr>
<td>T</td>
<td>13</td>
<td>6.7</td>
</tr>
<tr>
<td>E</td>
<td>8</td>
<td>6.25</td>
</tr>
<tr>
<td>R</td>
<td>14</td>
<td>5.9</td>
</tr>
</tbody>
</table>
The association of particular incidents with low levels of involvement does not, necessarily, negate their value or importance. Each still forms an integral part of the 'whole lecture' which is experienced by the students although they may not themselves be, apparently, associated with high levels of involvement or even intended to be. Also, it must be remembered that none of the incidents examined occur in isolation and thus none can ever be considered solely responsible for the thoughts associated with them.

The data does seem to suggest that whereas illustrations and examples are associated with higher levels of involvement and, presumably, do help the lecturer to demonstrate how the lecture content relates to real life, non-illustrated statements are not so effective in this respect.

They also suggest that questioning techniques are apparently not associated with particularly high levels of involvement. However, the evidence in favour of 'technical' questions (Qt) is somewhat stronger for the microbiology course, the only one where it was used on a regular basis.

This last point demonstrates that it is perhaps not as meaningful to look at the results for different aspects of lecturing behaviour across all three courses as to examine them for each course alone. Then it becomes possible to better understand how any particular aspect fits in with the lecturer's overall style (as well as the different teaching and learning contexts). Thus I shall now examine briefly the differences in results from the point of view of each lecturer's style and ideas about his or her lecturing.
8.4.2. The Individual Lecturers

The Research methods lecturer

This lecturer had expressed several hopes and beliefs about her lecturing style. For example, she hoped her illustrative examples would help to keep the students' attention and be found interesting by them. The results shown in table 8.4 for ‘Ip’ and ‘I’ incidents suggest that this was, in fact, the case.

The same cannot be said about her hope that rewording would increase the understanding of what she had to say. The low level of thoughts generally associated with incidents of rewording or rephrasing in the research method lectures would suggest that understanding did not appreciably increase as a result of such incidents.

The results shown in Table 8.4 suggest that the students did respond to her summary statements as she had hoped: they recognised them as containing material they needed to write down, though they did not have particular active thoughts about them.

The microbiology lecturer.

This lecturer had explained that she felt she needed to be communicating principles rather than detailed information. I think her N statements (note-taking cues) reflected very much this belief, more so, in fact, than her 'summary' statements. It was at such times that she went to pains to express what she felt were the fundamental basics of the subject. Table 8.4 shows that such incidents were associated with particularly high levels of thought - involvement.

Her 'chatty examples' (CE) were also, generally, associated with high levels of involvement and therefore, to some extent, were presumably helping the students to 'be in the situation' and better appreciate the whole of microbiology, as she had hoped.
Similarly, the results would suggest that her questions, particularly the technical ones ($q_t$), did 'make them think and recall' or at least some of the students.

As with the research methods lecturer, the results would suggest that her rewording did not appreciably increase understanding or make 'a deeper track'. This does not deny, however, that this aspect of her presentation helped her to pace her lectures.

**The applied physics and energy lecturer.**

This lecturer attempted to help students see where things fitted in by the use of R (relevance) statements, particularly, at the start of his lectures. It would appear that he was fairly successful in terms of the amount of active thoughts associated with such incidents in his lectures. Students also did seem to recognise and attend to his summaries. But, they seemed less involved and attentive for those incidents where he was explaining and talking while facing the blackboard (CBL) and giving technical information (T).

His 'checking questions' incidents were not associated with very active thoughts but that was possibly not his intention.

Now I shall look at how the lecturers themselves, as well as their lecturing styles, were consciously perceived by students (as opposed to the influence their styles may have had on student thinking).

### 8.5 Results of the Repertory Grid Analysis

Each student's grid was, as one would expect, highly individual and the constructs describing the principal components of each grid varied greatly. So what comparisons are legitimate? As explained in Section 8.3, the first two components of a grid can generally
be assumed to represent the main dimensions along which the subject differentiates elements. As shown in Figure 8.3, the position of the elements for each grid can be mapped out in relation to the first two components. Thus, the position of each element relative to other elements can be seen: One way of comparing individual's grids is to actually look at the distance between elements - that is, rather than the distance of individual elements along the axis representing the principle components. The distances between elements are, in fact, included in the Ingrid programme output.

Slater has calculated that the expected distance between elements drawn from a construct system is the square root of \( \sqrt{\frac{2V}{(m-1)}} \) where V is the total variance about the construct means and m is the number of elements. Ingrid gives the observed distances expressed proportionally to the unit of expected distance, varying about 1 for a lower limit at 0 to an upper limit at the square root of m - 1.

Table 8.5 shows for each student the distance between element 4, the lecturer in question, and elements 6, 7, 8 and 9 (ideal self, lecturer liked, lecturer disliked and someone disliked). I chose these latter four elements because they were likely to be relevant indices of both positive and negative perceptions against which the lecturer in question could be considered.

The average distances between the elements being considered are given for each student group.

The table shows the sum of squares for the element lecturer in question. (This is obtained by adding together the squares of the distances of each construct for that element from their mean D).

A small sum of squares for any element is taken to imply that the subject's attitude towards that element is indifferent, since he has
Table 8.5 Repertory Grid Results

<table>
<thead>
<tr>
<th>Distance of elements 6, 7, 8 and 9 from 'lecturer of the course' element 4.</th>
<th>Someone disliked (9)</th>
<th>Lecturer disliked (8)</th>
<th>Lecturer Liked (7)</th>
<th>Ideal Self (6)</th>
<th>E.F. for Lecturer</th>
<th>Average Intrinsic Experience Score</th>
<th>Average Stimulated Recall Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 E.Sci</td>
<td>1.44</td>
<td>1.44</td>
<td>.33</td>
<td>.43</td>
<td>6.14</td>
<td>25.4</td>
<td>8.6</td>
</tr>
<tr>
<td>2 E.Sci</td>
<td>1.1</td>
<td>1.1</td>
<td>.94</td>
<td>.73</td>
<td>10.9</td>
<td>33.2</td>
<td>7.3</td>
</tr>
<tr>
<td>3 E.Sci</td>
<td>1.5</td>
<td>1.2</td>
<td>.31</td>
<td>.31</td>
<td>10.6</td>
<td>80.8</td>
<td>8.7</td>
</tr>
<tr>
<td>4 E.Sci</td>
<td>1.4</td>
<td>1.4</td>
<td>1.1</td>
<td>.18</td>
<td>16.9</td>
<td>80.8</td>
<td>7.4</td>
</tr>
<tr>
<td>5 E.Sci</td>
<td>1.40</td>
<td>.91</td>
<td>.55</td>
<td>.55</td>
<td>9.5</td>
<td>85.7</td>
<td>7.3</td>
</tr>
<tr>
<td>Average</td>
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<td>.65</td>
<td>.44</td>
<td>12.4</td>
<td>58.3%</td>
<td>7.9</td>
</tr>
<tr>
<td>1 ESS</td>
<td>1.1</td>
<td>1.03</td>
<td>.33</td>
<td>.85</td>
<td>19.7</td>
<td>0</td>
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<td>1.4</td>
<td>1.12</td>
<td>.64</td>
<td>.83</td>
<td>7.1</td>
<td>73.0</td>
<td>9.2</td>
</tr>
<tr>
<td>3 ESS</td>
<td>.78</td>
<td>.9</td>
<td>.64</td>
<td>1.3</td>
<td>-2.6</td>
<td>0</td>
<td>-</td>
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<td>1.22</td>
<td>1.12</td>
<td>.82</td>
<td>.92</td>
<td>11.7</td>
<td>20.0</td>
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<tr>
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<td>1.05</td>
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<td>.98</td>
<td>10.3</td>
<td>33.2%</td>
<td>7.6</td>
</tr>
<tr>
<td>1 Ho.Econ</td>
<td>.77</td>
<td>1.08</td>
<td>.66</td>
<td>1.02</td>
<td>10.0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>2 Ho.Econ</td>
<td>.77</td>
<td>.89</td>
<td>.72</td>
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<td>23.3</td>
<td>21.2</td>
<td>5.7</td>
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<tr>
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<td>.2</td>
<td>.9</td>
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<td>48.3</td>
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</tr>
<tr>
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<td>.26</td>
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<td>1.35</td>
<td>35.8</td>
<td>18.6</td>
<td>5.3</td>
</tr>
<tr>
<td>5 Ho.Econ</td>
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<td>.92</td>
<td>1.1</td>
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<td>52.2</td>
<td>8.1</td>
</tr>
<tr>
<td>Average</td>
<td>.67</td>
<td>.61</td>
<td>.88</td>
<td>1.17</td>
<td>25.3</td>
<td>31.2%</td>
<td>6.7</td>
</tr>
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<td>1 MB</td>
<td>1.25</td>
<td>1.03</td>
<td>.65</td>
<td>.69</td>
<td>11.3</td>
<td>34.8</td>
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<td>1.3</td>
<td>.53</td>
<td>.74</td>
<td>16.1</td>
<td>45.0</td>
<td>8.3</td>
</tr>
<tr>
<td>3 MB</td>
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<td>.66</td>
<td>.89</td>
<td>1.20</td>
<td>27.6</td>
<td>32.0</td>
<td>6.5</td>
</tr>
<tr>
<td>4 MB</td>
<td>1.48</td>
<td>1.22</td>
<td>.32</td>
<td>.58</td>
<td>12.9</td>
<td>77.7</td>
<td>9.7</td>
</tr>
<tr>
<td>5 MB</td>
<td>1.05</td>
<td>1.07</td>
<td>.90</td>
<td>.80</td>
<td>12.3</td>
<td>44.3</td>
<td>7.0</td>
</tr>
<tr>
<td>6 MB</td>
<td>.98</td>
<td>.85</td>
<td>.80</td>
<td>.95</td>
<td>10.1</td>
<td>86.2</td>
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</tr>
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<td>.85</td>
<td>19.4</td>
<td>84.5</td>
<td>9.7</td>
</tr>
<tr>
<td>8 MB</td>
<td>.99</td>
<td>.74</td>
<td>1.1</td>
<td>1.3</td>
<td>13.7</td>
<td>26.5</td>
<td>8.5</td>
</tr>
<tr>
<td>Average</td>
<td>1.11</td>
<td>1.00</td>
<td>.74</td>
<td>.89</td>
<td>15.4</td>
<td>55.0%</td>
<td>8.5</td>
</tr>
<tr>
<td>1 EAPPS</td>
<td>1.07</td>
<td>.85</td>
<td>.49</td>
<td>.99</td>
<td>18.1</td>
<td>100.0</td>
<td>-</td>
</tr>
<tr>
<td>2 EAPPS</td>
<td>1.27</td>
<td>.96</td>
<td>.36</td>
<td>.68</td>
<td>6.0</td>
<td>65.0</td>
<td>7.3</td>
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<td>3 EAPPS</td>
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<td>1.11</td>
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<td>.60</td>
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<td>4 EAPPS</td>
<td>1.00</td>
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<td>.93</td>
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<td>70.6</td>
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<td>5 EAPPS</td>
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<td>.57</td>
<td>.41</td>
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<td>6 EAPPS</td>
<td>1.0</td>
<td>.64</td>
<td>.44</td>
<td>1.00</td>
<td>19.9</td>
<td>65.0</td>
<td>8.3</td>
</tr>
<tr>
<td>7 EAPPS</td>
<td>1.37</td>
<td>1.07</td>
<td>.51</td>
<td>.76</td>
<td>10.8</td>
<td>38.1</td>
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</tr>
<tr>
<td>8 EAPPS</td>
<td>1.10</td>
<td>.96</td>
<td>.67</td>
<td>.87</td>
<td>5.2</td>
<td>69.3</td>
<td>8.4</td>
</tr>
<tr>
<td>9 EAPPS</td>
<td>1.12</td>
<td>.90</td>
<td>.57</td>
<td>.79</td>
<td>2.3</td>
<td>44.4</td>
<td>5.7</td>
</tr>
<tr>
<td>Average</td>
<td>1.24</td>
<td>.95</td>
<td>.58</td>
<td>.78</td>
<td>10.6</td>
<td>67%</td>
<td>8.1</td>
</tr>
</tbody>
</table>
rated it neither high nor low but near the mean or all constructs. Conversely, a large sum of squares is taken to indicate that the element is an important one in the subjects' construct system, whether his attitude towards it is consistently favourable, or consistently unfavourable, or favourable in some respects and unfavourable in others.

It is interesting to note—though it is not shown in the table—that elements 8 and 9 tended to have relatively high sums of squares. Element 6 also had a generally high sum (7 tended to be quite low). The highness of these three sums of squares supports the choice of at least these elements as indices against which to compare the lecturer in question: for the high sum of squares indicates that these elements are important ones in the subjects construct system.

Table 8.5 also shows the mean intrinsic experience of relevance scores obtained in Chapters 4, 5 and 6, and the average level of thoughts recorded for each student for the stimulated recall of critical incidents.

8.5.1. Influence of Contact with Lecturer

The students can be divided into three main groups from the point of view of knowledge and acquaintance with the course lecturer. The human science and microbiology students form one group: both lots of students were from the same department as the lecturer and had a lot of contact with the lecturer. The ESS and EAPPS students form a second group: they came from different yet quite closely related departments to the lecturer's with whom they had some contact. Overall, the ESS students had greater contact than EAPPS students among whom the contact was generally restricted to students in the lecturer's tutorial group. The third consisted of the home economics students who were from a department only marginally related to the lecturer's and had no contact with her other than in the weekly lectures.
The degree of contact with and knowledge of the lecturer is reflected in the results shown in Table 8.5. The students who saw their lecturer as closest to their ideal self and lecturer liked were the human science students, and they were followed by the EAPPS, microbiology, ESS and, lastly, home economics students.

Given this generally positive correlation and since they had roughly the same amount of contact with their lecturer as the human science students, one might have expected the microbiology students to have put their lecturer closer to ideal self. (They did, in fact, have her fairly close to lecturer liked and well away from lecturer and someone disliked). It should be noted, however, that this lecturer was much older and from a different generation than her students, whereas the research methods lecturer was fairly close in age to her students.

8.5.2. Relationship of Students' Perceptions to other Factors

It can be seen from the individual results that whilst a distinctly positive perception of the lecturer (see, for example, students 1 H.Sci, 3 H. Sci, 4 H.Sci, 5 H.Sci, 4 MB, 2 EAPPS, 5 EAPFS and 7 EAPPS) is generally associated with a high intrinsic experience of relevance score and/or a high stimulated recall score, the reverse is not always true. That is, a high experience of relevance score and/or a high stimulated recall score need not be associated with a very positive perception of the lecturer (see, for example, 6 MB, 7 MB and 4 EAPFS, and, to a lesser extent, 2 ESS, 3 EAPPS and 8 EAPPS).

These results support the view that there are other factors, besides perceptions of the lecturer, that can influence either students' experience of relevance or approach to the lectures. One such factor that I have already suggested is the amount of background knowledge and experience of the students.
8.5.3 Principal Components of Students' Repertory Grid

Figures 8.4 and 8.5 are diagrams representing the principal components of students' construct systems. (See Appendix D for remaining students maps). They are highly individualistic and not easily comparable. However, it is interesting to examine them from the point of view of the inter-personal attributes described by Carl Rogers (1969). Rogers describes three categories of attributes that he believes to be effective in promoting learning. These are:

1) Realness in the facilitator of learning. i.e.
   "a willingness to be a person, to be and live the feelings and thoughts of the moment."
   In his description and examples of this category he refers to such things as: 'genuineness', 'honesty', 'congruence', 'shared feelings' and 'not presenting a front or facade'.

2) Prizing, Acceptance, Trust, Rogers' writes:
   "I think of it as prizing the learner, prizing his feelings, his opinions, his person. It's caring for the learner, but a non-possessive caring. It is acceptance of this other individual as a separate person, having worth in his own right."
   In his description and examples of this quality, Rogers refers to such things as: 'positive regard', 'respect of others', 'concern for others', 'communication with others', 'acceptance of others as individuals'.

3) Empathic understanding: For Rogers this is:
   "When the teacher has the ability to understand the students' reactions from the inside, has a sensitive awareness of the way the process of education seems 'to the student'."
   Here Rogers refers to such things as: 'sensitive awareness of
others' processes', 'understanding of other persons' points of view', 'non-evaluating, non-judging understanding'.

I examined students' grids to see whether the lecturers who were liked or disliked were construed in terms of the type of attributes, or lack of, described by Rogers. And, indeed, these types of qualities were, in most of the grids, reflected in the constructs describing the first principal component. (Which tended to be the major axis of the students' construct systems and the one on which elements 7, 8 and 9 were most differentiated). In many cases, Rogers' attributes were also reflected in the constructs describing the second component.

Thus examination of Figure 8.4 shows that element 7, lecturer liked, tended to be placed towards the pole describable in terms of Rogers' attributes (See 1 H.Sci where element 7 is towards 'Understanding and broadminded,' and 5 H. Sci where it is towards 'patient'). Element 8, lecturer disliked, on the other hand, tends to be towards the opposite pole (For 1 H.Sci, 8 is towards 'rude, unable to see others' views' and for 5 H.Sci 'Interested in selves most of the time').

Similarly for Figure 8.5, 4 ESS, for example, has element 7 towards 'Will do anything for anyone', and element 8 towards 'Impatient'. A similar picture can be seen for the other students (See Appendix D).

In all, twenty one of the thirty one grids have the 'lecturer-liked' towards the poles of the first and/or second component which seems to be described in terms of Rogers' attitudinal qualities.

Other constructs that describe the poles towards which the 'lecturer liked' tended include:
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense of humour</td>
<td>X5</td>
<td>X5</td>
<td></td>
<td>X5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social awareness</td>
<td>X4</td>
<td>X4</td>
<td></td>
<td>X4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manner of speech</td>
<td>X2</td>
<td>X2</td>
<td></td>
<td>X2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calm, non-argumentative</td>
<td>X1</td>
<td>X1</td>
<td></td>
<td>X1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friendly and likeable</td>
<td>X3</td>
<td>X3</td>
<td></td>
<td>X3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Fig. 8.4: Human Scoring:**

- Moderate academic effort
- Organized, neat, to structure things
- Sense of humour
- Social awareness
- Manner of speech
- Calm, non-argumentative
- Friendly and likeable
- Organized, neat to structure things
- Moderate academic effort
Fig 8.4 continued.

- Not so intellectual
  - Would not suit new people or situations
  - Academic difficulty
  - Capacities with new people or situations

- Blustery overpowering
  - Loyal
  - Approaches

- Hardworking

- X2
  - 1X
  - 3X modest
  - Broadminded
  - Gentle

- X4
  - 5X Liberal
  - Minded
  - Patient

- X5
  - Interested
  - Only in self's most of time concerned

- X6
  - 1X
  - X7

- X1
  - X3
  - X8

- X8
  - X9

- X

- X

- X
Fig 8.5 ESS Students' Rep. Grid: Analysis

<table>
<thead>
<tr>
<th>1 ESS</th>
<th>Religion Dogmatic</th>
<th>x5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manner</td>
<td>Common values</td>
<td>x8</td>
</tr>
<tr>
<td>Honestly</td>
<td>x9</td>
<td></td>
</tr>
<tr>
<td>2 ESS</td>
<td>Self-conscious Insulated</td>
<td>x8</td>
</tr>
<tr>
<td>Manner</td>
<td>Concerned about others welfare</td>
<td>x7</td>
</tr>
<tr>
<td>Advocacy</td>
<td>x6</td>
<td></td>
</tr>
<tr>
<td>x4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Experienced Industrious</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Self</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mother</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Good friend</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Lecturer in question</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Father</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Ideal Self</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Lecturer liked</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Lecturer disliked</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Someone disliked</td>
<td></td>
</tr>
</tbody>
</table>
Fig. 8.5 continued.

2.555

Biased attitude to people
Sometimes inconsiderate

Talks to the point & interesting
Knows what talking about - if not
Easy going & tolerant
Easy to talk to

Open and receptive to people
Goes down to earth

Can't express selves very well
Quick tempered

Impatient

Will do anything for anyone
Pleasant temperent
Polite

Impatient

Don't respect

Smokes
Good at explaining
Easy going
Grid | Construct
---|---
2 H.Sci | Organised and tends to structure things
3 ESS | Talks to the point and interesting, knows what talking about, - if not too good at explaining
2 Ho.Econ | Not particularly approachable with personal problems
3 MB | Interesting speaker
8 MB | Ability to become totally involved in something
2 EAPPS | Ability to convey ideas
3 EAPPS | Neat and tidy - interesting
3 EAPPS | Rigorous - practical
4 EAPPS | Don't evade a good question
4 EAPPS | Tries to be relevant
7 EAPPS | Able to inject enthusiasm for subject to others
9 EAPPS | Knowledge and intelligence

These additional constructs seem to emphasise that, in addition to Rogers' attitudinal qualities, the lecturer's abilities in presenting material is important, as his own interest, knowledge and enthusiasm for the topic.

8.6 Summary and Conclusions

The aim of this chapter has been to examine the role of the lecturer and the influence that teaching styles and characteristics have upon students' approaches and thinking in lectures. This has been done by studying the characteristic aspects and styles of the three case study lecturers, students' perceptions of the lecturers, and the relationship between these two factors to students' approach and thinking during lectures.

The study and the analysis of data was both exploratory and developmental. I wanted particularly to explore the potential of several different research methods; including participant observation, stimulated recall and repertory grid analysis.
I was able to develop, through my observations of the lectures, a coding system for identifying aspects of the characteristic styles of the lecturers (See Table 8.2). Using this I was able to give a description of each lecturer's style.

The system also enabled me to identify critical incidents in lectures which I could play back to students for their "stimulated recalls" of lectures. Students responded to the lecture extracts by recalling what they were either thinking or doing at that time during the lecture. Starting with the coding systems of Bloem and Siegal et. al. I developed a coding system for coding students' thoughts during the lectures (See Table 8.3.). The system reflects the amount of active involvement by the student with the semantic content of the extract.

By examining students' statements I was able to identify which aspects of the lecturer's behaviour were apparently associated with greater amounts of active involvement. Among these aspects were illustrations and examples, the discussion of pros. and cons., and the giving of definitions. Two other aspects which seemed to have this association, but not so generally, were note-taking cues and the use of AVA.

The strategies which were apparently least likely to be associated with active thoughts included unillustrated relevance statements, rewording and rephrasing, technical information and asides. However, as I have already explained, the association of particular incidents with low levels of involvement does not, necessarily, negate their value or importance.

Students' perceptions of their lecturers were investigated here by using the repertory grid technique. The completed grids were examined by the analysis of the distance between elements and the principal components of each grid.
It would appear that students who were more acquainted with and had greater knowledge of the lecturer had more positive perceptions of the lecturer. It also seems that students with positive perceptions of the lecturer generally experienced the relevance of the content intrinsically and/or with much active involvement with the semantic content. However, high intrinsic experience of relevance and/or active involvement did not necessarily mean the student had a positive perception of the lecturer. Other factors are also involved.

Finally, examination of the principal components analysis of grids confirmed that lecturers liked by students tended to be viewed positively in terms of Rogers' three categories of inter-personal attributes (realness in the facilitator of learning, prizing acceptance and trust and empathetic understanding). In addition, students saw lecturers they liked as being able to present their material well and as having interest, knowledge and enthusiasm for their topics.

Conclusions

Much more work is needed to confirm the tentative findings in this chapter. The overriding message of the chapter is probably just how complex and important the role of the lecturer is. It does seem, however, from the data obtained, that it is possible to identify and describe differences in lecturers' characteristic styles of lecturing. The extent different aspects of lecturer's behaviour influence student thinking, during lectures, is much more difficult to discern as it is impossible to directly correlate any single aspect with students' thoughts. A students' thoughts must result from his or her whole experience of the lecture and the teaching and learning context.
It was possible to identify the extent a students' thoughts reflected active involvement with the semantic content of the lecture. It was also possible to identify which aspects of lecturer behaviour seemed to be the most frequently associated with active student thoughts. Thus it would seem that different aspects of the lecturer's behaviour can, to some degree, influence students' thoughts and involvement with the content, but only in respect to their being a part of the lecturer's whole presentation.

Similarly, it did appear that the perceptions students' had of the lecturer were influenced by their knowledge of and acquaintance with the lecturer. Finally, there was evidence that lecturers who were positively perceived were perceived in terms of Rogers' three categories of inter-personal attitudes.
CHAPTER NINE

SUMMARY OF THESIS AND RESEARCH FINDING
CHAPTER 9: SUMMARY OF THESIS AND RESEARCH FINDINGS

9.0 Summary of the Research

In Chapter 2 I explained how my major concern at the start of my research was with student learning from lectures. I shall start this final chapter by tracing how this initial interest developed into a study of students' experience of relevance in higher education.

As a result of reading the literature on lecture research I concluded that there was insufficient consideration of the factors which influenced students to respond positively, or negatively, to a particular lecture. This was mainly because researchers had paid insufficient attention to students' experience of the situation, a fact that could be derived from the main points of Chapter 1. These were:

(i) Most of the lecture research was done from a teacher's perspective.

(ii) The research was dominated by attempts to:
   (a) identify 'effective' lecturing skills; and to
   (b) evaluate and contrast the effectiveness of the 'lecture method',

(iii) Despite the large amount of research carried out it apparently remains a matter of controversy:
   (a) whether, and which, lecturing skills correlate with achievement measures; and
   (b) for which objectives the lecture method is effective.

(iv) Lecture advice texts are based primarily on:
   (a) research of the afore-mentioned type;
   (b) particular learning theories and/or psychological principles.

(v) Most of the advice offered in 'how to lecture' texts concentrate on preparation, structure, organisation and delivery. Less attention is paid to those characteristics, also identified as important, such as 'enthusiasm for the subject' and 'teacher-student rapport'.

(vi) Those studies taking more of a students' perspective in their approach point particularly to the importance of the teacher-student relationship and the "human" qualities of the lecturer.
There is evidence to suggest:
(a) Lecturers do not always find the results of lecture research very useful;
(b) Some of the methodological assumptions underpinning most attempts to identify 'effective' lecturing skills are of debateable validity.

There have been negligible attempts to look at the learning process in lectures themselves.

There have been only limited attempts to look at students' experience of lectures and at the perceived influences upon their approach to lectures.

Research on lectures has seldom taken account of such factors as the teaching and learning context and institutional requirements.

Previous research had thus tended to over-concentrate on attempts to identify 'effective' lecturing skills and to evaluate the lecture method and has paid too little attention to students' experience of lectures. There was an inadequate understanding and awareness of students' experience of lectures and of the influences upon that experience. Similarly, there was an inadequate understanding and awareness of contextual and institutional factors and their influences upon students' experience. One consequence of this is that lectures are generally discussed as if they were all of one type.

As a result of reading the work of Ference Marton, and his colleagues at Gothenburg University, on student learning, and relating this to a small pilot study which I carried out, I became particularly interested in looking at students' experience of the relevance of the lecture content.

In Chapter 2, I described what I understand student learning from lectures to be:
"I see student learning from lectures as the process whereby students discover for themselves the meaning of what is being said and as the approach they adopt in carrying out that process."

This view of learning relates closely to Marton's ideas. He refers to the students' view of the 'reality' of his or her subject. Marton believes that students who adopt what he terms a 'deep' orientation to learning are able to recognise that the subject is to do with the same reality as that of their daily lives; 'they are able to grasp what is behind the written or spoken discourse'. On the other hand, Marton suggests, that if the students do not assume that the subject has anything to do with their own reality they are more likely to adopt what he terms a 'surface' orientation to their learning. Similarly, such students are more likely to be extrinsically motivated in their learning and, as the work of Fransson has shown, are consequently again more likely to adopt a 'surface' level approach to their learning.

The implication of what Marton is saying for student learning in lectures seems to be that, if 'deep' learning is to occur, it is important that students recognize what they hear is to do with the same reality as that of their daily lives. Put another way, they need to perceive what they hear as relevant.

In a small pilot study investigating students' views about one of the lecture courses, which I was to carry out an in-depth investigation the following academic year, I identified two factors which seemed related to students' opinions about the course. They were:

(i) How well students' knew or were personally acquainted with the lecturer;
(ii) the amount of background knowledge and familiarity students had with the subject.

These two factors were, it appeared, important in that they were both, arguably, potential influences upon a students' ability to experience the subject as relevant.

Students with little background may not appreciate the relevance of a subject. But one of the key roles of a lecturer in this respect may be to help such students to come to a better appreciation. His or her ability to do this may depend on his (or her) relationship with the student and how the student perceives him. However, both the probability of their being a good relationship between the two and the student having a favourable perception of the lecturer is likely to be greater the more acquainted the student is with the lecturer.

The possible relationship of students' background knowledge and the consequences of being acquainted with the lecturer to students' experience of the relevance of the subject interested me very much. I consequently decided to look more closely at their experience of the relevance of specific lectures and at possible influences upon that experience, in particular, that of the lecturer and the way he or she is perceived by students.

In Chapter 3 I discussed at a more detailed methodological level my decision to concentrate on students' experience. In that Chapter, I describe the increasing trend within educational research, particularly in curriculum evaluation studies, away from quantitative psychometric approaches which are divorced from the reality of the classroom and towards more qualitative, naturalistic approaches. The aim of such approaches being 'description and interpretation' rather than 'measurement and prediction'.
At the same time, there has evolved a greater concern for carrying out idiographic, intensive studies of the individual rather than attempting to establish nomothetic, generalisable laws.

From my survey of this less traditionally orientated research I concluded that my own research needed to be:

(i) grounded in reality;
(ii) focussed on the individual and the individuals' experience.

It was with these two methodological objectives in mind that I decided to conduct the research within the context of three case studies of three specific lecture courses. The precise approach I took in each case study was dictated by what was most appropriate to each situation. I did, however, in each case have a general plan to try to understand the relevant teaching and learning context for each of the three lecture courses and to focus on a chosen sample of students' experience of the lectures.

To gain a better understanding of context, I used the methods of participant observation, informal interviewing and questionnaire survey. I chose the students on whom to focus in depth according to the response I received to a ("key factor") questionnaire I developed specially for the purpose. This identified students according to the amount they thought they were influenced, in their opinions of lectures, by their perceptions of the interpersonal qualities of the lecturer. I then chose 33 students at three levels of influence - high, middle and low.

I investigated further these students' perceptions of their lecturers by means of the repertory grid. To research their experience of the lectures I used the methods of stimulated recall and in-depth interviewing.
Although my research was primarily focussed on student learning and experience I also kept in close contact with each of the case study lecturers and asked each to do a stimulated recall of a lecture they had given.

As a consequence of my own observations of the lectures and discussions with, particularly, the lecturers but also students, I describe in Chapter 8, the characteristic aspects and style of each of the lecturer's presentations. However, nowhere in the thesis do I give a unilateral definition of the 'lecturer method'. I leave it to the reader to decide, if he should think it relevant, whether each of the situations that I studied fit his conception of 'the lecture'.

9.1 Levels of Experience of Relevance

Chapters 4 - 7 represent the central core of the research. In these four chapters I described what I discovered about how students experienced the relevance of the lectures.

As explained in Chapter 7, which summarised the case studies described in each of the 3 previous chapters, I found that students' experience of lectures was not a straight-forward matter of them experiencing or not experiencing something as relevant. The lectures were invariably experienced as relevant but the experience varied qualitatively. I identified three levels of experience of relevance:

extrinsic;

vicarious;

intrinsic.

An extrinsic experience of relevance was when the content was regarded from the point of view of achieving some external demand,
usually assessment.

A vicarious experience seemed to be associated with the lecturer whose own interest or enthusiasm was either transferred to the student or he, or she, provided illustrations, examples, etc., which the student was able to recognise and identify with.

Finally, an intrinsic experience of relevance was associated with a students' ability to see the relevance of the content in a way which was meaningful to his own understanding and framework of thinking.

In Chapter 4 I described in some detail the eight category coding system that I developed from students' statements describing their experience of lectures. With this system I identified how each of my sample students experienced the relevance of their lectures and, in particular, the lecture content (See Tables 4.4, 4.5, 5.3, 5.4 and 6.2 and 6.3).

The eight categories of descriptions are:

(1) Extrinsic; other person's perspective, general
(2) Extrinsic; other person's perspective, specific
(3) Extrinsic; students' own perspective, general
(4) Extrinsic; students' own perspective, specific
(5) Vicarious; perceived
(6) Vicarious; illustrative
(7) Intrinsic; general
(8) Intrinsic; specific

In Chapter 7 I discussed the evidence that these eight categories could discriminate in a meaningful way between different students' experience of the lectures. The main support for the categories came from the following points:
(i) The descriptions of the students' orientations towards their courses and lectures were all in fairly close agreement with the pattern of their experiences of relevance scores.

(ii) The type of extrinsic experience of relevance, particularly for predominantly intrinsic students, seemed to be the most appropriate for the kind of assessment system in operation or a course. That is, it was of a general extrinsic type where the assessment was of an unseen nature, and of a specific general type where the assessment was continuous and seen.

(iii) There were high levels of intrinsic experience in those situations where one might have expected them, for example, where students were doing a final-year chosen option.

(iv) Students who had closer contact with the lecturer seemed to have a greater tendency towards vicarious experience of relevance.

I also discussed in Chapter 7 some of the possible influences on students' experience of relevance. I did not suggest that either any one or even mix of factors by themselves cause students to experience the relevance in a particular way. It did seem, however, that the following factors influenced students and the way they experienced the relevance of the content:

(1) The teaching and learning context, in particular
   (a) Students' perceptions and perspectives
   (b) Teacher characteristics and teaching style, and students' perceptions of these.

(2) Students' perceived background knowledge and familiarity with the subject.
These findings follow on from the pilot study where I suggested that (1) a student's background knowledge of his subject, and (2) how well he was personally acquainted with the lecturer were potential influences upon a student's experience of relevance.

I consider the main research finding of this thesis, however, to be the identification of the qualitatively different levels of extrinsic, vicarious and intrinsic experience and the eight categories describing them. In saying this I am taking the position that social science research can come up with generalisations but, to be most meaningful, such generalisations should be at the level of categories of description and not individual behaviour. As Marton points out:

"Whereas individuals' behaviour may not be generalisable to other situations, categories of description may well be."

(Marton, 1978).

I can not generalise from the behaviour of the case study students to other students. I have no basis for saying, for example, that students taking courses outside their own department tend to experience such courses extrinsically or, conversely, that students taking final-year chosen options will experience a course intrinsically. Neither can I define precisely those circumstances when I would expect vicarious experience of relevance to occur. I can, however, suggest fairly confidently, as a result of my research, that I would expect students to experience the relevance of their lectures either extrinsically, vicariously or intrinsically. Similarly, I believe it would be possible, using the eight categories, to identify at which of the three levels a student was experiencing relevance. Thus the categories of description that I have identified are not only generalisable to other lecture situations but they also provide a way
of attempting to understand and characterise students' experience of those other situations. In the present study I used the eight categories to help me understand the way the case study students experienced relevance differently and the influences upon their experience. In a future study this could be further explored, particularly, by looking at the same students' experience of different lecture courses.

9.2 Lecturing and Learning

I have already indicated why I was interested in looking closer at students' experience of relevance of lectures and how this connects with student learning. Having identified three qualitatively different levels of experience it is necessary to look again at this relationship.

As I have explained, my original interest in students' experience of relevance arose from my reading of the work of Ference Marton and from the relationship between his ideas and the results of a small pilot study I did.

Marton makes a connection between students' views of the 'reality' of their subject and a 'deep' approach to learning. He says of 'deep' processors, for example:

"They grasp the fact that the University subjects they are reading have to do with the same reality as that of their daily lives. This means they make use of their knowledge and skills."

(Marton, 1975).

As it is described in this thesis intrinsic experience of relevance is very much about students making use of their 'knowledge and skills'. And it may well be that intrinsic experience is an essential
element of 'deep' processing.

Similarly, extrinsic experience of relevance seems to link with some of Marton's ideas about 'surface' processing. Thus, he writes:

"Learning does not take place in a vacuum, but in various social contexts. Learning situations are characterized by the demands they make, primarily in the form of exams, grades, etc. Thus it is a matter of external demands to some extent inescapable: one must try to learn certain things not because one wants to find out something but because someone thinks that one ought to learn them for the future. 'Surface-orientation' in learning, in the sense that one focusses on a written or spoken message rather than what the message was intended for, is, to a large extent, a product of this situation. One does not read in order to find out something but to reproduce a text or to be able to answer questions."

(Marton et. al. 1977).

Marton thus suggests that students 'surface process' not to find something out but to be able to reproduce the text or to answer questions etc. Students who experience relevance extrinsically similarly focus on what they need to fulfil external demands such as these. Thus, again, extrinsic experience may well be an essential element of 'surface processing'.

I have already explained, in Chapter 7, that I did not look at learning outcomes associated with specific lectures. I did, however, have a record of each student's final grade for his or her course and I assumed that these grades gave some indication of the level of learning. While in no-way suggesting any cause and effect relationship I did find that students who were predominantly intrinsic in their experience of relevance were generally the ones who obtained the higher grades.

As I mentioned in Chapter 2, Marton found that the level of outcomes is related to the level of processing. Thus, this last result
would again suggest that intrinsic experience of relevance is associated with 'deep' level learning.

A study by Hounsell and Ramsden gives further support to this last point. They say that the "more able" students were those who had:

"the ability to see assessment tasks in their wider context (and) also tended to be the students who approached their work in a very positive way, trying to see connections between previously studied and currently studied materials, relating specific tasks to their understanding of the subject area, and relating their reading or problem-solving to their own extra curricular experiences."

This description of the "more able" students is reminiscent of both Marton's 'deep' level processors and my intrinsic experiences of relevance.

The results of a study by Biggs also suggest that students who experience relevance extrinsically are more likely to 'surface' process material and those who experience intrinsically to 'deep' process. Biggs, who, like Marton, is concerned with qualitative differences in learning, identified three types of study processes exhibited by students - instrumental, internalising and achieving - and describes each in terms of a motivational component and a general strategy (or approach) component. (Biggs, 1979).

The motivational component of the instrumental process is 'extrinsic' and that of the achieving process is 'need achievement'. It seems to me that both these study processes contain, to use my terminology, elements of extrinsic experience of relevance. The motivational component of the internalising study process is 'intrinsic' and it would seem self-evident, by virtue of our shared terminology, that this contains elements of intrinsic experience.
The strategies which Biggs says are associated with instrumental and internalising processes relate closely to Martor's 'surface' and 'deep' level approaches. Thus Biggs's results implicitly suggest that extrinsic experience is associated with 'surface' level processing or learning and intrinsic with 'deep' level processing or learning.

Biggs looked at the qualitative differences in outcomes associated with each of his three study processes. His results suggest, he says, that the internalising processes tend to produce learning outcomes of a higher order of complexity than either instrumental or achieving processes. He also found an interaction between, on the one hand, the level of learning outcomes and, on the other, the task conditions and students' perceptions of what was required.

Laouillard (1978), in her study on student learning, found a relationship between the level of approach (deep or surface) adopted for different learning tasks and the students' perception of what was required. Both her and Biggs's results suggest that when students adopt a 'surface' approach they do so to comply with their perceptions of external requirements. When students experience relevance extrinsically their thoughts are similarly focussed on external requirements and their perceptions of these. Thus, the implication is that 'surface' level processing contains elements of extrinsic experience of relevance.

Further evidence that intrinsic experience is associated with 'deep' level learning and extrinsic with 'surface' comes from the work of Fransson. He found a strong relationship between extrinsic motivation and 'surface' level processing and between intrinsic motivation and 'deep' level processing. He explains:
"A subject motivated by test demands to read a text for which he has very limited interest is very probable to adopt a surface-learning strategy, while deep-level learning seems to be the normal strategy chosen by a student motivated only by the relevance of the text to his personal needs and interest."

(Fransson, 1978).

Fransson's description, particularly of the intrinsic motivated student, resembles that of a student who experiences relevance intrinsically. In drawing support from Fransson's results I am, to some extent, assuming intrinsic experience of relevance where there is intrinsic motivation, and extrinsic experience where there is extrinsic motivation. However, before I can really make this assumption, it is necessary to examine closer the concepts of intrinsic and extrinsic motivation.

The concept of motivation is generally, as Peters (1958) reminds us, a very confused one. DeCharms has, however, attempted to clarify the distinction between extrinsic and intrinsic motivation by discussing them in terms of personal causation:

"the crux of the distinction between extrinsic and intrinsic motivation may lie in the knowledge or feeling of personal causation."

(DeCharms, 1968).

That is, DeCharms sees intrinsic motivation as when the person perceives (knows or feels) himself to be the 'locus of causality' for his behaviour. Extrinsic motivation, on the other hand, is when the person perceives the 'locus of causality' to be external to himself.

Let me move the argument from motivation to experience. To assume that a student who experiences the relevance of a subject extrinsically also perceives the 'locus of causality' for his doing the subject to be external to himself does not seem unreasonable. Neither
does it seem unreasonable to assume that a student who experiences relevance intrinsically - recognizing the content to have meaning to his own understanding and framework of thinking - will also perceive the 'locus of causality' for doing the subject to be himself.

However, whereas extrinsic motivation is most likely to be accompanied by extrinsic experience of relevance, and intrinsic motivation by intrinsic experience, I would suggest it is not inevitably the case. A student who is extrinsically motivated towards a subject is not necessarily destined to experience the relevance of the lecture content extrinsically. There may well be, for example, some part, some example, some reference, which relates very closely to his own reality and, as a consequence, he will experience the relevance of it, not necessarily intrinsically, but perhaps more possibly, vicariously.

The implication of the above is that it is not perhaps as important that some one is extrinsically motivated as that he experiences the relevance extrinsically. It is for this reason that I believe that vicarious experience of relevance is potentially so important when discussing learning from lectures. In the research that I have done I found it very difficult to differentiate 'good' vicarious experience of relevance from intrinsic experience of relevance and, in terms of learning, I can see no reason not to believe that vicarious experience of relevance is more likely to be associated with 'deep' level learning than 'surface'. That this is the case seems to be inferred by the very nature of vicarious experience of relevance which implies that the lecturer is helping the student to get 'behind the written or spoken discourse' where he (or she) is apparently not otherwise able or willing to do so himself.
Elton (1973) seems to allude to a similar kind of process to that of facilitating vicarious experience when he discusses the devising of learning situations to 'create' intrinsic motivation "through interest in the method of work." He suggests that the experience of being allowed to govern one's own work method is likely to create intrinsic motivation towards the work. That Elton believes intrinsic motivation can be created by experience of this kind gives support to my earlier comment that an extrinsically motivated student is not necessarily destined to experience the relevance extrinsically.

Elton assumed the ensuing intrinsic motivation will be associated with higher-order learning objectives in much the same way that I have assumed 'good' vicarious experience of relevance is associated with 'deep' learning.

There is some indirect evidence for the importance of vicarious experience in the lecture research literature itself. The most striking point is the already mentioned (Chapter 1) frequency with which lecturer characteristics or skills such as maintenance of student interest, lecturer enthusiasm and lecturer-student rapport have been identified as 'effective' lecturing skills. On the other hand, there is relatively little discussion on why they are so important.

The more qualitative studies of students' experiences, discussed in Chapter 1, also suggest that the kind of features and characteristics identifiable with vicarious experience of relevance are important to students' experience of lectures. The students in these studies commented on the importance of the lecturer-student relationship and the "human" qualities of the lecturer. The importance of these in the facilitation of learning has frequently been suggested elsewhere in the literature by such authors as Rogers (1969).
In Chapter 8 I described the results of my analysis of the lecturer - student relationship and, as part of that, students' perceptions of the lecturer. I also looked at the relationship between, on the one hand, characteristic aspects of presentation and style and students' perceptions of the lecturer and, on the other hand, students' approaches and thinking in the lecture.

Although, as I explained in the chapter, the work was very explorative, I did find that students with apparently positive perceptions of the lecturer generally experienced relevance intrinsically and/or were actively involved with the semantic content. I also found that vicarious - type lecturing behaviours, such as the use of illustrative examples, seemed very frequently to help students to be actively involved with the semantic content.

The foregoing discussion about the research findings in this thesis suggest that the three levels of experience of relevance have important implications for student learning. Both my research and other recent research support the following points:

1. Extrinsic experience of relevance is associated with, and may be an essential element of, 'surface' level learning.

2. Intrinsic experience of relevance is associated with, and may be an essential element of, 'deep' level learning.

3. Vicarious experience of relevance is, potentially, a transitional level between extrinsic and intrinsic experience.

4. 'Good' vicarious experience is most likely to be associated with 'deep' level learning.

5. In terms of 'deep' level learning it is more important whether a student experiences the relevance of the content intrinsically than whether he is intrinsically motivated towards the content.
The identification of vicarious experience of relevance and its potential as a transitional level between extrinsic and intrinsic experience is important. For the existence of this level of experience and its potential provide strong evidence that the lecturer has a key role, hitherto unrecognised, to play in student learning. They also go towards explaining why so many studies make reference to the importance of such characteristics as the student - lecturer relationship and the enthusiasm of the lecturer.

Although this research was done exclusively on the lecturer situation, the discovery of the three levels of experience, in particular that of vicarious, may well have major significance to other teaching and learning situations.
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APPENDIX A

CASE STUDY QUESTIONNAIRES
RESEARCH METHODS

STUDENT EVALUATION

FROM: Ms. S. Arber, Dr. M. Hornsby-Smith, Mrs. A. Scambler, K. Macdonald

TO: All Second Year Research Methods Students: HS2: HE2 and HE4

This evaluation sheet is being sent to all students who are about to complete the course in Research Methods. You are now in a position to evaluate the course as a totality. Your responses will be taken into account in preparing the course next year.

We would be very grateful if you would complete this evaluation including as many additional comments as you think fit, and return it by internal post or to a pigeon hole (S. Arber) in the Sociology Department Office (35 AD 17) as soon as possible. This evaluation is anonymous, therefore no follow-up reminders will be sent to you. (For extra space, feel free to write on the other side of this paper).

Even if you have little to say about the course, please return the evaluation so that a high response rate can be obtained!

1. In what ways, if any, should the method of organising/conducting lectures be changed?

2. Any other comments about Research Methods lectures?

3. In what ways, if any, should the method of the classes by the tutor be changed?

4. What changes, if any would you suggest in the types of topics covered in classes?
5. a) In general, how would you evaluate the handouts?

b) Did you find any handouts particularly useful/stimulating? Which were these?

c) About what percentage of the handouts did you read?
   i) Before the assigned class?

   0 10 20 30 40 50 60 70 80 90 100

   ii) At some point during the year?

   0 10 20 30 40 50 60 70 80 90 100

6. Any general comments about Research Methods classes?

7. What is your general feeling about the present method of course assessment?
8. a) How interesting did you find these exercises? Rank 1 (best) to 6 (worst).
   b) How useful would you rate them as a method for learning research techniques? Rank 1 (best) to 6 (worst).

   Sampling - The Captive Wife
   Questionnaire criticism
   Scaling-construction of attitude scales
   Analysis - elaborating 2 variable relationships
   Systematic Observation
   Official Statistics

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<th>(a)</th>
<th>(b)</th>
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9. Would you have found other exercises more useful as a learning experience? If so what changes would you suggest?

10. a) We propose that in future each exercise will be marked by one tutor, in the interests of standardisation. Have you any comments?
   
   b) If the value of course exercises is increased in relation to the examination it will be necessary for the marked work to be returned at the end of the course for the examiners to see. Have you any comments?

11. What percentage of your Part I Research Methods mark do you think should be course work?
12. Any other comments about course assessment?

13. For Human Sciences Students,
    Are you doing Sociology as a Major, Minor or Twin Subject?

14. For Home Economics Students,
    What do you feel is the overall relevance of this course for your degree?
Please indicate the relative emphases on the different parts of the course which you would have preferred. Ring the appropriate code on the five point scale for each item. (There should be a rough balance between the number of items requiring more emphasis and the number of items requiring less emphasis.)

<table>
<thead>
<tr>
<th>CONTENT</th>
<th>PREferred Emphasis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>very much more</td>
</tr>
<tr>
<td>1. The relationship between theory and methods of data collection</td>
<td>1</td>
</tr>
<tr>
<td>2. The scientific method: induction and deduction</td>
<td>1</td>
</tr>
<tr>
<td>3. The theory underlying sampling</td>
<td>1</td>
</tr>
<tr>
<td>4. Actual techniques of sampling</td>
<td>1</td>
</tr>
<tr>
<td>5. Designing fixed-choice interview schedules</td>
<td>1</td>
</tr>
<tr>
<td>6. Mail (self-completing) questionnaires</td>
<td>1</td>
</tr>
<tr>
<td>7. Uses of unstructured (intensive) interviews</td>
<td>1</td>
</tr>
<tr>
<td>8. Techniques of interviewing</td>
<td>1</td>
</tr>
<tr>
<td>9. Reactivity: issues of reliability and validity</td>
<td>1</td>
</tr>
<tr>
<td>10. Problems of measuring concepts</td>
<td>1</td>
</tr>
<tr>
<td>11. Coding</td>
<td>1</td>
</tr>
<tr>
<td>12. Scaling - attitudinal &amp; occupational</td>
<td>1</td>
</tr>
<tr>
<td>13. Construction of indexes</td>
<td>1</td>
</tr>
<tr>
<td>14. Tabulation &amp; the presentation of data</td>
<td>1</td>
</tr>
<tr>
<td>15. The theory underlying causal analysis</td>
<td>1</td>
</tr>
<tr>
<td>16. Elaboration of two variable relationships</td>
<td>1</td>
</tr>
<tr>
<td>17. The uses of factor analysis</td>
<td>1</td>
</tr>
<tr>
<td>18. Participant observation</td>
<td>1</td>
</tr>
<tr>
<td>19. Systematic observation</td>
<td>1</td>
</tr>
<tr>
<td>20. Analysis of observational data</td>
<td>1</td>
</tr>
<tr>
<td>21. Unobtrusive measures</td>
<td>1</td>
</tr>
<tr>
<td>22. Triangulation</td>
<td>1</td>
</tr>
<tr>
<td>23. Uses of historical &amp; documentary sources</td>
<td>1</td>
</tr>
<tr>
<td>24. Content analysis</td>
<td>1</td>
</tr>
<tr>
<td>25. Critiques and uses of official (administrative) statistics</td>
<td>1</td>
</tr>
<tr>
<td>26. Experimental design</td>
<td>1</td>
</tr>
<tr>
<td>27. Panel (longitudinal) studies</td>
<td>1</td>
</tr>
<tr>
<td>28. Research by ethnomethodologists</td>
<td>1</td>
</tr>
</tbody>
</table>

OTHER TOPICS (PLEASE INDICATE ITEMS)

<table>
<thead>
<tr>
<th></th>
<th>very much more</th>
<th>rather more</th>
<th>some</th>
<th>rather less</th>
<th>very much less</th>
</tr>
</thead>
<tbody>
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<td>29. .........................................................</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>30. .........................................................</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
LECTURER: SARA ARBER

==============================================================================

You are asked to rate your lecturer on EACH of the items listed below. For each item please circle the number which seems to you most appropriate for the lecturer you are rating. The highest possible rating for an item is 5, the lowest is 1; a score of 3 represents an average. Brief descriptions of the two extreme ratings have been given for each item.

1. **Organisation of Course**
   Subject matter very well organised in agreement with syllabus 5 4 3 2 1 Subject matter frequently unrelated to syllabus

2. **Interest in Subject**
   Lecturer full of subject and able to arouse interest 5 4 3 2 1 Subject seems irksome to lecturer; unable to arouse interest

3. **Presentation of Subject Matter**
   Clear, definite, forceful, audible 5 4 3 2 1 Indefinite, involved, monotonous

4. **Skill in Guiding the Learning Process**
   Encourages student to think and learn independently, critically & creatively 5 4 3 2 1 Little or no attention to student comment; ignores or discourages original & independent effort

5. **Course Work**
   Gives close attention to course work and makes constructive and helpful comments 5 4 3 2 1 Course work treated casually and superficially; few or no helpful comments

6. **Willingness to Help**
   Lecturer friendly and usually willing to help students, even if busy 5 4 3 2 1 Lecturer aloof, sarcastic and preoccupied; unwilling to help students

7. **Course Materials**
   Handouts, references and other materials helpful for further reading 5 4 3 2 1 Inadequate or no course materials

8. **Contribution to Intellectual Development**
   Encouraged you to critically evaluate relevant subject matter 5 4 3 2 1 Discouraged critical thinking or the relating of the course to other subject area.

9. **General Estimate of Course**
   One of the most interesting and stimulating. 5 4 3 2 1 One of the most boring

10. **General Estimate of Lecturer**
    Competent 5 4 3 2 1 Incompetent
You are asked to rate your class tutor on EACH of the items listed below. For each item please circle the number which seems to you most appropriate for the class tutor you are rating. The highest possible rating for an item is 5, the lowest is 1; a score of 3 represents an average. Brief descriptions of the two extreme ratings have been given for each item.

1. **Organisation of Course**
   - Subject matter very well organised in agreement with syllabus
   - Subject matter frequently unrelated to syllabus

2. **Interest in Subject**
   - Lecturer full of subject and able to arouse interest
   - Subject seems irksome to lecturer; unable to arouse interest

3. **Presentation of Subject Matter**
   - Clear, definite, forceful, audible
   - Indefinite, involved, monotonous

4. **Skill in Guiding the Learning Process**
   - Encourages student to think and learn independently, critically & creatively
   - Little or no attention to student comment; ignores or discourages original & independent effort

5. **Course Work**
   - Gives close attention to course work and makes constructive and helpful comments
   - Course work treated casually and superficially; few or no helpful comments

6. **Willingness to Help**
   - Lecturer friendly and usually willing to help students, even if busy
   - Lecturer aloof, sarcastic and preoccupied; unwilling to help students

7. **Course Materials**
   - Handouts, references and other materials helpful for further reading
   - Inadequate or no course materials

8. **Contribution to Intellectual Development**
   - Encouraged you to critically evaluate relevant subject matter
   - Discouraged critical thinking or the relating of the course to other subject areas

9. **General Estimate of Course**
   - One of the most interesting and stimulating
   - One of the most boring

10. **General Estimate of Class Tutor**
    - Competent
    - Incompetent
The enclosed questionnaire has been developed in order to obtain an overall impression of students' reactions to the Research Methods course and to particular issues arising in it.

This is an important part of my study of the 1976/77 Research Methods course and I very much hope you will be kind enough to complete and return the questionnaire to me. (You can do this by leaving it in the Sociology Office in the enclosed envelope).

In addition, Sara Arber is also interested in receiving any feedback obtained through this questionnaire so that it can be taken into account when planning and preparing next year's course.

The individual replies will be confidential to myself, however, and will be anonymous in any case.

Thank you very much for your help now and throughout the Research Methods course.

Vivien

enc.
Would you please answer the following questions and then complete the lecturer rating scale on the last page. (If you require more space, please use the reverse side of the question sheets).

1. Please indicate which degree course you are doing:

   Economics, Sociology and Statistics.  
   Home Economics  
   Human Sciences - Sociology Major  
   Sociology Minor  
   Joint

2. Please comment on how useful the following were to help you understand particular topics:

   (a) Inclusion of research studies in the lectures.

   (b) Inclusion of examples in the lectures.

   (c) Material displayed on the overhead projector.
(d) The way the lectures were structured and organised.

3. Please comment on your reaction to sociological terminology used in the lectures.

4. Have you any comments on the organisation and structure of the classes?
5. How useful did you find the handouts?

6. To what extent, if at all, did the timetabling of lectures and classes influence your reaction to them?

(a) The lectures.

(b) The classes.
7. What was your general reaction to the exercises that you had to do?

8. Have you any specific reaction/comments to the individual exercises, these were:

    (a) Criticism of an interview schedule.

    (b) Constructing and coding a self-completion questionnaire.

    (c) Sampling procedures for surveys.
(d) Data Analysis - Elaboration of a 2-variable relationship.

(e) Non-reactive observation (not ESS).

(f) Research Proposal - application for research funds.

9. Are there any changes you would like to see to the present method of giving out exercises?
10. What is your general feeling about the present method of course assessment?

11. Please comment on how you saw the link between lectures, classes and the exercises.

12. What do you feel is the overall relevance of this course to your degree course in general?
please ring the response you think most accurately describes the Research Methods lecturer with respect to the following statements:

<table>
<thead>
<tr>
<th>The Lecturer:</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Encourages student participation in lectures</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
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<tr>
<td>2. Allows opportunities for asking questions</td>
<td>5</td>
<td>4</td>
<td>3</td>
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<tr>
<td>3. Has a good lecture delivery</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
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<tr>
<td>4. Has good rapport with students</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
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<tr>
<td>6. Is approachable and friendly with students</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
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<tr>
<td>7. Is respectful towards students</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
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<tr>
<td>8. Is able to reach student level</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
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<tr>
<td>9. Enables easy note taking</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
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<tr>
<td>10. Provides useful printed notes*</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
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<tr>
<td>11. Would help students by providing printed notes*</td>
<td>5</td>
<td>4</td>
<td>3</td>
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<tr>
<td>12. Has a wide knowledge of his/her subject</td>
<td>5</td>
<td>4</td>
<td>3</td>
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<td>1</td>
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<tr>
<td>13. Maintains student interest during lectures</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
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<tr>
<td>14. Gives varied, lively lectures</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
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<tr>
<td>15. Is clear and comprehensible in lectures</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
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<tr>
<td>16. Gives lectures which are too fast to take in</td>
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<td>3</td>
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<tr>
<td>17. Gives audible lectures</td>
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<td>3</td>
<td>2</td>
<td>1</td>
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<tr>
<td>18. Gives structured, organised lectures</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
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<tr>
<td>19. Appears to be enthusiastic for his/her subject</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
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</tbody>
</table>

* Please answer if applicable

Thank you,

Vivien Hodgson.
I would like to thank very much all those people who have completed and returned the Research Methods Questionnaire that I sent you all a couple of weeks ago. I very much appreciate your assistance.

I would like to get a high response rate for those questionnaires, and was therefore hoping that I can persuade those people who have not yet completed them to do so now.

So if you haven't yet completed your questionnaire, I would be very grateful if you could find the time to do it.

Thanks again for all the assistance I have already received.

---

I would like to remind any of you who haven't returned the Research Methods Questionnaire that I sent you a few weeks ago, that it is still not too late to do so.

If you could find the time to complete and return it before the end of term I would be very grateful.

Thanks,
# Applied Physics and Energy Questionnaire

**1.** Did you find that the course in term 2 (1) developed coherently (5) seemed haphazard?

- Rating: 2.3

**2.** Did you find the course material in term 2 (1) interesting (5) boring?

- Rating: 2.3

**3.** Do you consider that the course was (1) adequately illustrated in examples and applications (5) inadequately illustrated?

- Rating: 2.6

Include your own work in connection with the problem sheets and recommended reading.

Which topic areas in particular needed more applications:

---

**4.** Did you find derivations and proofs in the lectures (1) well explained (5) poorly explained?

- Rating: 3.1

**5.** For this course, would you have preferred to
   A. have weekly tutorials and no seminars
   B. keep the present balance
   C. have weekly tutorials and fortnightly seminars

Enter A, B, or C

- Rating: 2A, 5B, 9C

**6.** Did you find the tutorials (1) most helpful (5) a waste of time?

- Rating: 1.6

Please say why: ........................................

**7.** Were the seminars (1) useful (5) unhelpful?

- Rating: 2.6

Please say why: ........................................

**8.** Would you have liked more emphasis on how to use basic calculus methods? (Answer yes or no)

- Rating: 2Y, 15N

**9.** What were the most valuable things you got out of the course?

- Please enter your response here: ................................................
Response to main topic areas of the course

In the table below, for each topic please circle letter(s) for any of the statements A to E which you agree with.

A. It has been or probably will be helpful in other courses.
B. It was interesting in itself.
C. It was already familiar to me, and was used usefully.
D. I should have liked more time on this.
E. Less time should have been spent on this.

<table>
<thead>
<tr>
<th>Topic Areas</th>
<th>Circle responses: e.g. A  B  C  D  E</th>
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</thead>
<tbody>
<tr>
<td>1. Energy resources and demand</td>
<td>2  6  8  10  12  14  16  18  20  22</td>
</tr>
<tr>
<td>2. Newton's Laws</td>
<td>3  5  7  9  11  13  15  17  19  21</td>
</tr>
<tr>
<td>3. Force, work, kinetic and potential energy</td>
<td>4  6  8  10  12  14  16  18  20  22</td>
</tr>
<tr>
<td>4. Torque, angular acceleration, moment of inertia</td>
<td>5  7  9  11  13  15  17  19  21  23</td>
</tr>
<tr>
<td>5. Angular momentum and kinetic energy of rotation</td>
<td>6  8  10  12  14  16  18  20  22  24</td>
</tr>
<tr>
<td>7. Hydroelectricity</td>
<td>8  10  12  14  16  18  20  22  24  26</td>
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<tr>
<td>8. Windmills</td>
<td>9  11  13  15  17  19  21  23  25  27</td>
</tr>
<tr>
<td>9. Kinetic theory of gases</td>
<td>10 12  14  16  18  20  22  24  26  28</td>
</tr>
<tr>
<td>11. Black-body radiation, Stefan's law, emissivity</td>
<td>12 14  16  18  20  22  24  26  28  30</td>
</tr>
<tr>
<td>12. Calculation of heat transfer and insulation</td>
<td>13 15  17  19  21  23  25  27  29  31</td>
</tr>
<tr>
<td>14. Lenses and f/numbers</td>
<td>15 17  19  21  23  25  27  29  31  33</td>
</tr>
<tr>
<td>15. Heat pumps</td>
<td>16 18  20  22  24  26  28  30  32  34</td>
</tr>
<tr>
<td>16. Wave phenomena</td>
<td>17 19  21  23  25  27  29  31  33  35</td>
</tr>
<tr>
<td>17. Seawave energy</td>
<td>18 20  22  24  26  28  30  32  34  36</td>
</tr>
<tr>
<td>18. Photoelectricity, biocconversion</td>
<td>19 21  23  25  27  29  31  33  35  37</td>
</tr>
</tbody>
</table>

19. Would you have liked any additional topics to have been covered in the course? Please say which:
APPENDIX B

ANALYSING INSTRUCTIONS FOR STUDENTS’ THOUGHTS
Appendix B : Analyzing Instructions for Students Thoughts

Levels of students' experience of the relevance of lecture content

I believe there are the following eight levels at which students can experience the relevance of the lecture content. A fuller description of each of the levels is given in the accompanying paper.

1. Extrinsic, from other person's perspective - general
2. Extrinsic, from other person's perspective-specific.
3. Extrinsic, from student's perspective - general
4. Extrinsic, from student's perspective - specific
5. Vicarious - through lecturer's perceived intrinsic interest
6. Vicarious - through lecturer's illustrations of intrinsic interest.
7. Intrinsic - general
8. Intrinsic - specific.

Background information

The course being considered is a social research methods course which is continually assessed on the basis of six (or for certain students five) pieces of course work. This course work is variously referred to by students as the homework, the exercises, the projects and the experiments.
Levels of students' experience of the relevance of lecture content:

1. Extrinsic: other persons' perspective.

The content is regarded from the point of view of achieving some desired result and how the student thinks the other person (e.g., the lecturer) would expect or want this result to be achieved. The only reason for taking note of the material therefore is in terms of extrinsic demands and how the student thinks the material relates to these demands in terms of how he feels the lecturer would expect them to be fulfilled. (or any other person)

This experience of the lecture content can be at either a general or a specific level:

General: The student simply recognises the materials potential importance without relating it to any specific extrinsic demand.

For example: "you expect what the lecturer writes on the board to be the important things so whatever you write you get that down.

Specific: The student actively considers how, where or which extrinsic demand the material might assist him towards.

Well in such things she talks a lot of sound sense, I mean its all good common sense but I suppose you need to revise common sense for the questions she will set on the exam ............... Its obviously going to be different, even so she wants you to write it in the exam so its as well to write it down in her notes, so you remember to do it in the exam.

2. Extrinsic: student's perspective.

The experience of the relevance of the content is still in terms of achieving desired results but from the perspective of how the student sees himself achieving this result. He is thus aware of the extrinsic demands upon him and he views the material in terms to its potential in assisting him to fulfill these needs.
Again, this experience of the relevance of the lecture content can be at a general or a specific level.

**General:** The student recognizes the material might be of potential use in fulfilling the extrinsic demands upon him but he does not consider the exact implications of how.

For example: "Also relates to the homework so! . . . . As it gets nearer towards handing in the homework time I get more conscious of the fact need help you know and try to get as much out of the lectures as you can.

**Specific:** The student is actively aware of how, where or which extrinsic demands this might help him with.

For example: "I was probably thinking about the homework actually end how I could put that in the homework. You know use that, because have to think of a survey to do and I was trying to think how I could use it but thought it a bit involved watching tred marks in a museum or something, you know on the tiles, I don't know, other then that it takes to long. I couldn't do that in two weeks.

Vicarious experience of relevance.

Students experience the relevance of the content vicariously through what is essentially recognition of aspects of the lecturer's intrinsic experience of its relevance.

This can be in two ways:

**Perceived lecturer's intrinsic interest:** Here the student perceives the lecturer's interest and enthusiasm for the material and this is transferred to the student.

For example: "Certain things got the impression she doesn't like it and it's a lot better if the lecturer is interested in it and enjoys doing it. If the lecturer is fed up you're fed up."
Lecturer's illustrations of the subjects intrinsic interest: This is where the lecturer is essentially putting over his intrinsic experience of the materials relevance in which the student finds facilitates his view of the reality of the content.

For example: "When she relates it to specific subjects people have done you can sort of see the theory going into practice more...... makes it more interesting so I listen more."

4. Intrinsic experience of relevance.

This is where the student can see the relevance of the content in a way meaningful to themselves. That is the material has some sort of meaning and reality to their way of thinking and they are able to relate the content to this. This takes in their overall view and way of thinking about the subject in general. Again this can be at either a general or a specific level.

General: The student recognises the intrinsic relevance of the content but does not at that time actively consider the exact implications of this information to his reality.

For example: "I understood it and I found the content interesting so I didn't stray, my mind didn't wander"

Specific: The student actively relates the content to their own understanding and framework of thinking, during the lecture.

For example: "Yeah, at this point, chiefly because it was about children and reading and schools, which I am particularly interested in, I had plenty of thoughts of my own.......They reinforced what she was saying."
I have not appreciably altered the descriptions of the different levels. However, the following points might assist you:

1) **General v Specific:**

When its **specific** it is directly related to some piece of content or the student's framework of thinking. i.e. they (in the case of intrinsic) are trying to fit in the content or relate the content to themselves in some way or (in the case of extrinsic) their perception of the extrinsic demands upon them.

General is more in terms of their general approach, a way of thinking and acting without reference to a specific instance where they are doing what they are expressing.

2) **Vicarious experience can stimulate and facilitate intrinsic experience.**

If the student simply (as in the example given) finds their interest etc., stimulated by e.g. a description of a particular study then its vicarious. If the student goes further and relates the study to their own experience or ideas etc., it is then intrinsic.

Hope this helps.
APPENDIX C

STIMULATED RECALL RESULTS
## Appendix C

### Research Methods Stimulated Recall Results

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### Appendix C

**Microbiology Stimulated recall results**

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**Note:**
- CODE: Identification code for each sample.
- A: Average number of colony-forming units (CFUs).
- AVAB: Average number of viable colonies.
- T: Time of sample collection.
- St.P: Standard practice value.
- N: Number of replicate samples.
- ØCE: Observed count efficiency.
- AVABL: Average number of bacteria.
- Tp: Time point for analysis.
- A: Summary of results.
### Appendix C

**Applied Physics and Energy Stimulated Recall Results**

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</tbody>
</table>

En = Energy lecture  
Phys = Physics lecture
APPENDIX D

MAPS OF STUDENTS' CONSTRUCT SYSTEMS
## Appendix D  Maps of Student Construct Systems

### Home Economics Pop. Guides Analysis

<table>
<thead>
<tr>
<th>Elements</th>
<th>1 Ho Econ</th>
<th>2 Ho Econ</th>
<th>Older generation Approachable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Self</td>
<td>x 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Mother</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Good friend</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Lecturer in question</td>
<td>x 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Father</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Ideal Self</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Lecturer liked</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Lecturer disliked</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Someone disliked</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **1 Ho Econ**
  - More due in hand first
  - Weaker more easy going nature: x 8
  - Very clear & precise in explanation
  - Approachable & helpful: x 6
  - Too critical of others
  - Minor imperfections
  - Impatient: x 9

- **2 Ho Econ**
  - Similar in character
  - Similar interests & concerns: x 3
  - Deeper knowledge of one subject
  - Revels in public speaking: x 5

- **Older generation Approachable**
  - Not particularly approachable
  - With personal problem
  - Seemed generation: x 7
### Home economics students continued

<table>
<thead>
<tr>
<th>3 Ho Econ</th>
<th>4 Ho Econ</th>
<th>5 Ho Econ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Have lots of self-confidence</strong></td>
<td><strong>Seeking perfection</strong></td>
<td><strong>Together in ideas</strong></td>
</tr>
<tr>
<td>Get on with other people easily</td>
<td>Boring</td>
<td>Mutual education - helping others in careers - experienced</td>
</tr>
<tr>
<td>3 x 2</td>
<td>2</td>
<td>5 x 7</td>
</tr>
<tr>
<td><strong>Concerned with you as an individual</strong></td>
<td><strong>Caring</strong></td>
<td><strong>Friendly</strong></td>
</tr>
<tr>
<td>4 x 9</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td><strong>Friendly</strong></td>
<td><strong>Reassuring</strong></td>
<td>4</td>
</tr>
<tr>
<td>8 x 4</td>
<td>6 x 7</td>
<td>5 x 1</td>
</tr>
<tr>
<td>Not nice to have around</td>
<td>Trust</td>
<td>Boring</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Put ill at ease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>x5</td>
<td>x7</td>
<td>x2</td>
</tr>
<tr>
<td>Self-conscious entering in public</td>
<td>Academic ability</td>
<td>Neurotic in attitude</td>
</tr>
<tr>
<td>x5</td>
<td></td>
<td>Totally summed without intensity present</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Usually - one experienced</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x1</td>
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</table>
## Appendix D

2. Microbiology Students Key-Word Analysis

<table>
<thead>
<tr>
<th>1MB</th>
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<tbody>
<tr>
<td>Critical</td>
<td>Helpful</td>
</tr>
<tr>
<td>Boring</td>
<td>Easy to talk to</td>
</tr>
<tr>
<td>x9</td>
<td>x3</td>
</tr>
<tr>
<td>x8</td>
<td>x4</td>
</tr>
</tbody>
</table>

- Approachable
- Available when needed
- Helpful
- Easy to talk to
- Feel affection
- Reliable

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>x2</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>x1</td>
<td>8</td>
<td>x</td>
</tr>
</tbody>
</table>

- Nervous and shy
- Difficult in communication
- Difficult to communicate with
- Respect advice in certain academic fields
- Somewhat dislikable

### ELEMENTS

- 1. Self
- 2. Mother
- 3. Good Friend
- 4. Lecturer in question
- 5. Father
- 6. Ideal Self
- 7. Lecturer like
- 8. Lecturer dislike
- 9. Someone dislikable

- Knowledgeable
- Easy to talk to
- Sometimes an introvert
<table>
<thead>
<tr>
<th>3MB</th>
<th>4MB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know each other well enough to say what mean without causing offense.</td>
<td>Hard worker</td>
</tr>
<tr>
<td>Can be informal with each other</td>
<td>Older</td>
</tr>
<tr>
<td>Inability to communicate</td>
<td>x</td>
</tr>
<tr>
<td>Boring</td>
<td>x</td>
</tr>
<tr>
<td>Lacking in tact - jar from perfect</td>
<td>x</td>
</tr>
<tr>
<td>Not interesting speaker</td>
<td>x</td>
</tr>
<tr>
<td>Easy going</td>
<td>x</td>
</tr>
<tr>
<td>Unfriendly</td>
<td>x</td>
</tr>
<tr>
<td>Unapproachable</td>
<td>x</td>
</tr>
<tr>
<td>Insufficient time helping other people</td>
<td>x</td>
</tr>
<tr>
<td>Strange sense of humour</td>
<td>x</td>
</tr>
<tr>
<td>Interesting speaker</td>
<td>x</td>
</tr>
<tr>
<td>Same age</td>
<td>x</td>
</tr>
<tr>
<td>Insufficient time helping other people</td>
<td>x</td>
</tr>
</tbody>
</table>
Appendix D

3. EAPPS students rep-grid analysis

1. EAPPS
   - Regional accent: Both loud
     - x9
   - Lecturer: Live far away
     - x8

2. EAPPS
   - Same Family
     - x7
   - Understated
     - x4

3. EAPPS
   - Not prepared to help
     - x9
   - Ability to convey ideas
     - x5
   - Good nature, in teaching and explaining
     - x1

4. EAPPS
   - Not prepared to help
     - x9
   - Need a tidy
     - x5
   - Interesting
     - x7

5. EAPPS
   - Rigorous
     - x9
   - Practical
     - x9
### Elements

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Self</td>
</tr>
<tr>
<td>2</td>
<td>Mother</td>
</tr>
<tr>
<td>3</td>
<td>Good Grand</td>
</tr>
<tr>
<td>4</td>
<td>Lecturer in question</td>
</tr>
<tr>
<td>5</td>
<td>Father</td>
</tr>
<tr>
<td>6</td>
<td>Ideal Self</td>
</tr>
<tr>
<td>7</td>
<td>Lecturer Ethanol</td>
</tr>
<tr>
<td>8</td>
<td>Lecturer Chemist</td>
</tr>
<tr>
<td>9</td>
<td>Someone Stitched</td>
</tr>
</tbody>
</table>

### Diagram

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>4 EAPPs</strong></td>
<td><strong>5 EAPPs</strong></td>
</tr>
<tr>
<td>Tries to be relevant</td>
<td>Calm Higher intellectual level</td>
</tr>
<tr>
<td>Hardworking</td>
<td>x2</td>
</tr>
<tr>
<td>x6</td>
<td>x8</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Concerned Calm Wisdom</strong></td>
<td></td>
</tr>
<tr>
<td>x7</td>
<td>x4</td>
</tr>
<tr>
<td>x9</td>
<td></td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't evade a good question</td>
<td><em>Keeping aloof</em></td>
</tr>
<tr>
<td>V.G. Sense of Humour</td>
<td><em>Less background reading</em></td>
</tr>
<tr>
<td>x5</td>
<td>x3</td>
</tr>
<tr>
<td>x4</td>
<td>x1</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Try to show they know more than you</td>
<td>Some Intellectual level</td>
</tr>
<tr>
<td>Relatively lazy</td>
<td>Less background reading</td>
</tr>
<tr>
<td>x3</td>
<td>x1</td>
</tr>
</tbody>
</table>

### Notes

- Tries to be relevant
- Hardworking
- Don't evade a good question
- V.G. Sense of Humour
- Try to show they know more than you
- Relatively lazy
- Concerned Calm Wisdom
### Appendix D

**GAPP3 Students Rep. Gendeanalysis**

<table>
<thead>
<tr>
<th><strong>GAPP3</strong></th>
<th><strong>3A</strong></th>
<th><strong>7EAPP3</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>×9</td>
<td>Artistic &amp; introverted</td>
<td>×9</td>
</tr>
<tr>
<td>×8</td>
<td>Narrow minded</td>
<td>×8</td>
</tr>
<tr>
<td>×7</td>
<td>thinks younger generation</td>
<td>×7</td>
</tr>
<tr>
<td>×4</td>
<td>Thinks everyone automatically best friend</td>
<td>×4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>3A</strong></th>
<th><strong>6X</strong></th>
<th><strong>7EAPP3</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>×1</td>
<td>×5</td>
<td>×1</td>
</tr>
<tr>
<td>×1</td>
<td>×5</td>
<td>×1</td>
</tr>
<tr>
<td>×1</td>
<td>×2</td>
<td>×2</td>
</tr>
<tr>
<td>×1</td>
<td>×1</td>
<td>×1</td>
</tr>
<tr>
<td>×1</td>
<td>×2</td>
<td>×2</td>
</tr>
<tr>
<td>×1</td>
<td>×2</td>
<td>×2</td>
</tr>
<tr>
<td>×1</td>
<td>×2</td>
<td>×2</td>
</tr>
</tbody>
</table>

- Strong-willed almost to point of stubborness
- One thing on mind which enforces upon you
- Able to inject enthusiasm for subject to others
- Fun to be with
- Understand work well but can't explain
- Understand work but can't explain
- Unable to listen (so problems)
- Concerned about me in other things but study
Elements

1. Self
2. Mother
3. Good Friend
4. Lecturer in question
5. Father
6. Ideal Self
7. Lecturer liked
8. Lecturer disliked
9. Someone disliked

Inexperienced
Unsure, unexperienced

8) EAPP

x9

Annoying to be in their company

x4

Know me well and like me

x3

Nasty, unhelpful

x2

Lack of knowledge

Less brains

9) EAPP

x1

I don't like Bob

x5

Bob interested in my well-being

x6

Respected

x8

Knowledge & intelligence

More brains

Nice Guys

Easy to get along with

Helpful
I would like to thank very much all those people who have completed and returned the Research Methods Questionnaire that I sent you all a couple of weeks ago. I very much appreciate your assistance.

I would like to get a high response rate for those questionnaires, and was therefore hoping that I can persuade those people who have not yet completed them to do so now.

So if you haven't yet completed your questionnaire, I would be very grateful if you could find the time to do it.

Thanks again for all the assistance I have already received.

__________________________

UNIVERSITY OF SURREY
INSTITUTE FOR EDUCATIONAL TECHNOLOGY

FROM: Vivien Hodgson
TO: 
ref: VH/GES
date: 14 June 1977

MEMORANDUM

I would like to remind any of you who haven't returned the Research Methods Questionnaire that I sent you a few weeks ago, that it is still not too late to do so.

If you could find the time to complete and return it before the end of term I would be very grateful.

Thanks,
Response to main topic areas of the course

In the table below, for each topic please circle letter(s) for any of the statements A to E which you agree with.

A. It has been or probably will be helpful in other courses.
B. It was interesting in itself.
C. It was already familiar to me, and was built on usefully.
D. I should have liked more time on this.
E. Less time should have been spent on this.

<table>
<thead>
<tr>
<th>Topic Areas</th>
<th>Circle responses: e.g. A B C D E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Energy resources and demand</td>
<td></td>
</tr>
<tr>
<td>2. Newton's Laws</td>
<td></td>
</tr>
<tr>
<td>3. Force, work, kinetic and potential energy</td>
<td></td>
</tr>
<tr>
<td>4. Torque, angular acceleration, moment of inertia</td>
<td></td>
</tr>
<tr>
<td>5. Angular momentum and kinetic energy of rotation</td>
<td></td>
</tr>
<tr>
<td>6. Nuclear Power</td>
<td></td>
</tr>
<tr>
<td>7. Hydroelectricity</td>
<td></td>
</tr>
<tr>
<td>8. Windmills</td>
<td></td>
</tr>
<tr>
<td>9. Kinetic theory of gases</td>
<td></td>
</tr>
<tr>
<td>10. Theory of heat transfer by conduction and convection</td>
<td></td>
</tr>
<tr>
<td>11. Black-body radiation, Stefan's law, emissivity</td>
<td></td>
</tr>
<tr>
<td>12. Calculation of heat transfer and insulation</td>
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</tr>
<tr>
<td>13. Solar heat collection</td>
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<tr>
<td>14. Lenses and f/numbers</td>
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<tr>
<td>15. Heat pumps</td>
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<td>16. Wave phenomena</td>
<td></td>
</tr>
<tr>
<td>17. Sea wave energy</td>
<td></td>
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<tr>
<td>18. Photocell, bioconversion</td>
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</table>

Would you have liked any additional topics to have been covered in the course? Please say which: