CHAPTER THIRTEEN

The Context of Learning in Academic Departments

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Introduction

Previous chapters have already indicated ways in which the educational context is bound up with students' approaches to learning. The framework of institution, department and courses, affects students' perceptions of reading, listening to lectures, writing essays and solving problems. Students do not, for example, simply read an article. They read it for a purpose connected with a course of study and in response to the requirements of those who teach the course. It is a central theme of this book that a student's perception of the learning context is an integral part of his or her experience of learning. The special concern of this chapter is with how students' *perceptions* of teaching, assessment, and course content and structure within the natural setting of academic departments may influence how students learn. The focus is thus not on the framework of courses and assessment itself, but rather on what the students *construct* out of this framework. How do students experience the effects of the context of learning at university? The following three extracts from research interviews serve to illustrate the pervasive influences of teaching and assessment on students' attitudes towards studying and on their approaches to learning.

> I certainly don't like it if you get tutorials where the guy just comes along and sits down and makes you stand up and do the work on the blackboard. Usually he picks on people that can't do it, which I think is terrible because you get stuck up at the blackboard and made to look a fool, and it switches you right off. . . I think I'm not going to do that if this guy's going to do that to me, because I don't learn anything; nobody else learns anything because it takes you so long to do the question; and it makes you very unhappy with that particular course, so I lose interest in the course. (Student taking Physics)

> I hate to say it, but what you've got to do is have a list of the "facts"; you write down ten important points and memorise those, then you'll do all right in the test .... If you can give a bit of factual information—so and so did that, and concluded that – for two sides of writing, then you'll get a good mark. (Psychology)

> Recently we were doing Fourier analysis, and the lecturer mentioned in passing that it was something which they used when they transmit moon pictures back to earth . . . that makes a lot of difference, you can see it being used . . . Another example he quoted was about why when you bang a drum you get lots of different sounds rather than when you say, play a violin you just get the one note . . . he said, if you look at this you can see why – and he was right, you could see why; it did make sense. (Physics)

At first these perceived effects may seem commonplace enough, and yet it is very important that we do not exclude them on that account. We saw in Chapter 1 how general principles of learning derived from controlled experiments—experiments which, by definition, exclude the sort of "background noise" illustrated in the examples given above —have often failed to help students and teachers to deal with the everyday problems they face. In contrast, this chapter will argue that recent research looking at students' own descriptions of their experiences of the learning context has crucial implications for improving the quality of teaching and learning in higher education.

Effects of the Learning Context in Historical Perspective

There is nothing new about the idea that learning in educational institutions is related to the environment in which it takes place. One of the dominant features of undergraduate education in universities is that it is usually confined within one subject area and often, especially in Britain, to one discipline. At least since Aristotle, men have commented on the differing demands made on the learner by different bodies of knowledge, and a complicated set of culturally defined norms and rituals has come to be associated with the process of learning and teaching in different disciplines. We shall look in more detail at differences in students' approaches, and in the contexts of learning provided in different subject areas, later in this chapter.

But the context of learning is not defined solely by the type of subject being taught and researched in an academic department. Teaching and assessment procedures vary between different academic units, although the effects of these differences on student learning are poorly understood. The realisation that university teaching contexts might have unintended consequences for learning— that they might discourage students from coming to grips with the fundamentals of their subject and encourage them to use tricks and stratagems to pass examinations—is certainly not a recent one. At least by the mid-nineteenth century the relationship between teaching and assessment methods and the quality of student learning was recognised. Cardinal Newman, for example, advocated "self-education" as "preferable to a system of (university) teaching which, professing so much, really does so little for the mind". Students who did without contact with what Newman (1852) held to be inappropriate teaching methods were more likely

> to have more thought, more mind, more philosophy, more true enlargement, than those earnest but ill-used persons who are forced to load their minds with a score of subjects against an examination, who have too much on their hands to indulge themselves in thinking or investigation, who devour premiss and conclusion together with indiscriminate greediness, who hold whole sciences on faith, and commit demonstrations to memory.

A little later in the century, Pattison (1876) rounded on the Oxford assessment system in equally uncompromising terms.

> [The examination papers] could not be answered by a mere knowledge of the subject . . . Quite another way must be taken in the preparation of the

candidate. For two years the pupil is thus forced along a false road of study in which neither science nor philosophy encounter him. Memory is really almost the only faculty called into play.

The examples could be multiplied. Thorsten Veblen (1918) wrote a bitter and sardonic critique of the American academic establishment in The Higher Learning in America, arguing that impersonal staff-student relationships and rigid assessment systems had destroyed scholarship and understanding in the process of increasing the apparent efficiency of universities. Whitehead (1932) described an "evil path" in education along which easy texts enabled answers to be learnt by heart and reproduced in the examination, and worthless teaching churned out the same knowledge time and time again, unleavened by a spark of imagination.

More recent research work, such as the studies by Snyder, Becker, and Miller and Parlett described in Chapter 1, unfortunately seems to confirm the potentially debilitating effect of the academic environment on student learning. Students may often respond to the "hidden curriculum" whose intentions run counter to those of the teaching staff. Instead of developing independence in judgement, problem-solving and analytic skills, they are obliged to devote their attentions to the narrow requirements of assessment, including the memorisation of ideas and facts.

Yet the picture is not uniformly gloomy. There is evidence to suggest that there is another side to the academic context. Good teaching and student control over pace and subject matter may facilitate under standing. Links between effective learning, satisfaction with studying, choice over topics of study, and positive evaluations of teaching have been discovered in a number of investigations (see, for example, Centra, 1976; Brennan and Percy, 1977; Fearn-Wannan, 1980)—although it is still unclear whether we can regard these as causal relationships. The arguments of a number of educational theorists, however, do indicate a functional link between the context and students' intentions to understand. Whitehead (1932) and Rogers (1969; see also Chapter 1), among others, argue that an appropriate mixture of imaginative teaching, choice and structure in the curriculum, and fitting assessment methods, can help students towards personal meaning in learning.

A Framework for Understanding the Effects of the Learning Context

Let us now turn to the more recent findings concerning the effects of the context of learning on students' approaches to studying. It is worth re-emphasising that our concern here is with the ways in which students' *perceptions* of assessment, teaching, and courses may influence their attitudes and approaches to studying, and not with apparently objective characteristics of the context such as continuous assessment methods, the use of learning packages and aids, and the division of teaching methods into lectures, tutorials and other techniques.

We can best try to understand the effects of the context of learning by examining the relationship between students' approaches and their perceptions of learning tasks at a number of separate but interconnected levels. Students' approaches

depend on their interest in the task and their previous experience of the area to which it relates; these influences are themselves associated with their perceptions of how the work will be assessed and with the degree of choice over content and method of learning available to the student. The perceived demands and support of teachers, and the content of the subject, also influence the students' approaches. At the most general level, the atmosphere of the academic department affects students' study orientations and ultimately their approaches to specific academic tasks.

The Student's Interest and Experience

The student's intention to understand or to reproduce material is very clearly related to his or her interest in carrying out the learning task, either for its own sake or in response to external requirements. Chapter 3 reported the work of Fransson (1977), for example, who showed how a lack of interest in the material studied, or a failure to perceive relevance in it, was associated with a surface approach, while interest was related to a deep approach. Here a British student identifies a similar contrast in the natural setting of her courses; having described a deep approach to essay-writing in one part of her Literature course, she compares this with her approach in a subject in which she is less interested.

> It's a bit confusing, [this subject]. When it comes to writing essays, because I'm not very interested in it, I tend to rush through the books I'm reading for the essays, so I don't really understand it when I've finished reading. And because there's such a lot of information I think you can either oversimplify or get into too much detail. I think I tend to oversimplify.

Attempts to understand the material being studied may also be frustrated by inadequate background knowledge of the relevant field. This is especially the case where the learning task demands that the student has grasped a fundamental concept. To the extent that this kind of task is more commonly set in scientific subjects, background knowledge is more frequently related to the approach a student takes to a task in science than in arts and social science disciplines. Conversely, students tend to mention the effects of interest (or lack of interest) more often in arts subjects than in science ones (Ramsden, 1979). Here a physics student describes how his previous knowledge of a type of problem helps him to take a deep approach, while his weakness in a basic mathematical concept makes his approach to another part of the same question anxious, passive and superficial.

> It was like one of the questions from a previous course, which I could relate. It was a Schrödinger equation for a particle in a box, which we'd solved generally before in chemistry, so I could relate it, I could see a picture of what I wanted. I knew basically what sort of answer I should get, and from that I could work my way through it... The other bit was different; I couldn't do it. Basically I gave up with it, because it was a function, which I've never really understood... I looked at it and I thought "That looks complicated"... It was very short, it looked like it would need a lot of rearranging.

It is not surprising to find that interest and background knowledge are related to each other in the natural setting of student learning.

> I think if I already know something about the subject about which I want to write, it helps. Because then I can write something out without having to refer to the books first, sketch something out in much more detail rather than just skeletal . . . This question was about popular recreations, and were attitudes to them changing. Well, having been grounded in Folklore—a consuming passion for the last eight years—I knew quite a lot about that already. So I just kind of wrote out three or four hundred words which gave a basis for it . . . mentally I was much more aware of accomplishing something useful.

Effects of Assessment

Even if they accept that interest and background knowledge influence a student's approaches to learning (and thereby the level of understanding reached), lecturers in higher education may attribute these effects to differences in students rather than to the effects of their teaching. Lecturers often argue that it is not their business to motivate students; poor academic progress, as we saw in Chapter 1, is typically explained in terms of low ability or of a lack of interest or motivation on the student's part – but these are seen as faults in the student (see also Entwistle and Percy, 1974). The first thing to say about these arguments is that they are at variance with the results of the recent research. It is clear that students take different approaches to different tasks: more precisely, the *same* student takes different approaches in different circumstances. The second point is that evidence now exists to show that students' interests, attitudes to studying, and approaches to academic tasks are strongly related to their experiences of teaching and assessment. In other words, lack of interest or motivation can be seen as arising from a context, rather than being fixed attributes which a student brings to a situation—although past experiences (at school, for example) clearly affect current perceptions.

The study from which these findings were mainly derived was carried out at Lancaster University from 1978 to 1981. The research involved both an intensive interview study and a large scale questionnaire survey. Let us look first at the interviews. A group of 57 students in six university departments (physics, engineering, independent studies, psychology, English literature and history) formed the sample. The students were interviewed about their methods of tackling recent academic tasks set as part of their normal studies. The range of tasks included problem-solving, reading, essay-writing and report-writing. This focus on specific tasks avoided too ready generalisations and provided more detailed information about the strategies used. Students were also asked about what they thought "typical" ways of studying were in their own and in a contrasting subject area, and were encouraged to relate their approach to the particular task they had described to their experiences of the learning context. They were asked, finally, to say something about the "good" and "bad" aspects of the main department in which they worked. Transcripts of the interviews were analysed in a similar way

to that described in other chapters; categories of descriptions for approaches and contexts and the relationships between them were identified, and later checked by other judges. Only a small part of the data is presented in this chapter; the extracts given are no more than illustrations of the categories and functional relationships revealed in the complete analysis (see Ramsden 1981; Entwistle and Ramsden, 1983).

We have seen throughout this book, in experiments and in everyday studying, that perceived assessment requirements are strong influences on the approach to learning a student adopts when tackling an academic task. For example, questions designed to encourage a surface approach to reading succeed in their intention (see Chapter 3), assessment of an overwhelming amount of curricular material pushes students into surface approaches and an incomplete understanding of the subject matter (Chapter 2); and the approach to problem-solving is related to the student's perception of marking (Chapter 8). Expectations about examinations influenced the forms of understanding students sought during revision (Chapter 9), while the anxiety experienced adversely affected the approach to learning in a learning experiment (Chapter 3). Where students *felt* that the assessment situation was threatening (whether the threat was objectively present in the experimental design or not), they were more likely to adopt a mechanical, rote learning approach to the learning tasks. Similar findings emerged from the Lancaster investigation in relation to a whole series of academic tasks and also to students' general attitudes towards studying. Students often explained surface approaches or negative attitudes in terms of their experiences of excessive workloads or inappropriate forms of assessment.

> I look at [the topic] and I think to myself, "Well, I can do that if I can be bothered to hunt through hundreds of textbooks and do the work"—and you sort of relate that to the value of the work in the course, which is virtually zero because it's so much exam assessment . . . I just don't bother with it until the exams come around . . . my revision is basically for the exams, purely and simply aimed at passing the exams without bothering too much about studying the subject. (Physics)

> In very few of the lectures was I picking [the principles] up as we did them. It took me all my time to get the notes down. So, and this in a way, the pace is so fast that you get the notes down and that's it. You don't really follow what's going on. You can't do two things at once. You can't sit back and listen to what's being said. You spend an hour taking notes down . . . I put this down to this very keen desire to cover that much work. (Engineering)

> It seems that if you follow a sort of straight line you seem to do better than if you, you want to pass any ideas of your own. You see, this essay I got back—which was a B—I wouldn't have thought I'd have got a B for that because I'd really got it all, out of a book, sort of thing, I'd just put it down in my own words . . . when I've put my own stuff down, it's all wrong. So, much more than I thought, they are, I suppose, looking for a reproduction of what's written elsewhere. (Psychology)

Taken together, these findings show that overloading of syllabuses and inappropriate assessment questions or techniques may force students into taking

reproductive approaches. The factual overburdening of syllabuses may explain why students display such a poor level of understanding in assessments which demand something more than the reproduction of well-rehearsed answers. What still remains unclear, however, is how to encourage deep approaches by attention to assessment methods. The attempts reported in Chapter 3 showed how difficult it is to induce deep approaches, at least by simple techniques of asking different types of questions.

Of course not every student responds to assessment pressures in the same way. But the range of responses itself demonstrates the powerful effects of the perceived assessment context. Some students will actively exploit the opportunities offered by assessment methods which allow good grades to be obtained without understanding or without personal commitment to what is being studied, while others will accept the system at face value (Miller and Parlett, 1974; Ramsden, 1979). Whether the response takes this "strategic" form or not, the effect on the quality of learning is still present. It is not only the lecturer's stereotypical "weak" student who resorts to surface approaches. The quotation from the interview of a psychology student at the beginning of this chapter, for example, comes from a student who obtained a first class honours degree. Some assessment procedures invite, even demand, rote learning. Another academically successful student from the same course illustrates how the form of continuous assessment he experienced discouraged him from using an approach aimed at developing personal meaning in learning.

> With that essay I was just discussing, that reference group one, I wrote for, with a, the image of a marker in mind, the personality, the person, I find that's important, to know who's going to be marking your paper . . . you see an essay is an expression of thought, really, but that's not what they're after, they're after a search through the library, I think, and a cribbing of other people's ideas.

These findings suggest that the experience of learning is made less satisfactory by assessment methods perceived to be inappropriate ones. High achievement in conventional terms may mask this dissatisfaction and also hide the fact that students have not understood the material they have learnt as completely as they might appear to have done.

Effects of Teaching and Course Design

Inappropriate assessment procedures encourage surface approaches, yet varying the assessment questions may not be enough to evoke fully deep approaches. How then may the context of learning be used to help rather than hinder understanding? It is probably true that assessments which are seen to require deep approaches by the students can discourage the use of reproducing strategies (see Elton and Laurillard, 1979). But a positive influence on deep approaches seems more likely to come from two other aspects of the context of learning: good teaching and greater freedom to choose both content and ways of learning.

Although staff development efforts in higher education have typically been directed towards improving teaching techniques (lecturing, giving tutorials, using audio-visual aids), the research evidence (see, for example, Dubin and Taveggia,

1969) suggests little direct effect of teaching on learning. What has been missing is the important *indirect* effects. How teaching and assessment affect students' individual ways of studying and, through those, what they ultimately learn has not been given enough attention. The ethos of higher education, especially in Britain, emphasises individuality and autonomy. It is very much a part of this ethos that what students do with their own time is their own responsibility: success is seen as the reward for the students' own efforts and ability. Lecturers rarely know, and perhaps feel it is not their concern, what students do in their private study time or even in lectures. Yet teaching does have important effects, in ways which we are only just beginning to recognise.

Teachers in higher education have considerable responsibility for the organization of their own courses. Most of us have memories of an inspiring teacher at school or at university who developed in us an interest in a field of study; such recollections are frequently complemented by thoughts of a lecturer who so bored and confused us that we were put off studying a subject. Such anecdotal impressions can now be complemented by the results of rigorous analysis of interview data concerning students' experiences of learning. This research makes it clear that lecturers in higher education do have far-reaching influences on learning. The relationships identified in these studies are not direct ones between teaching methods and student achievement, but indirect ones connecting students' perceptions of what lecturers do with their approaches and orientations to studying.

These important links have already been suggested in Chapter 10. Hodgson's work shows how some lecturers' approaches to teaching, as perceived by their students, can shift students' perceptions of the subject matter from extrinsic to intrinsic. Students may begin to experience the relevance of the content of the lecture for their own understanding if the lecturer can communicate interest and enthusiasm as well as information.

The study carried out at Lancaster enlarges on these findings. Students' perceptions of the quality of teaching they experienced were found to be functionally related to their attitudes towards studying and their approaches to learning. These effects can be seen to work in a number of different ways and, as will be made clear later, have several implications for improving teaching. The influence of the teaching context is illustrated here by a series of extracts from the Lancaster interview data.   The lecturer's interest in students, and helpfulness with study difficulties, are the first important qualities influencing students' attitudes and approaches.

> I find that the courses I do most work on are the courses where I get on with the tutors best . . . a tutor can put you off the subject . . . some of them don't like students, so they're not interested in what students have to say unless it's relevant to their approach. (English)

> Luckily I'm doing some courses with some good tutors on them – you know, they make the books come alive because they can talk about them and they can direct you to a chapter or a passage, and that's important I think . . . you could spend an hour rooting through and then just come to what you think is the essence of it all . . . if you get a guideline from the tutor, and I'm quite lucky in having someone who can point the way, then it's a godsend. (History)

I think a lot of the [lecturers] are just not particularly interested in you. I mean there are some who are . . . but some tutors, you know, just don't really bother if you learn or not; they just prefer to sit there and wait for you to think of what you don't know—I mean, if you knew what you didn't know you'd probably learn it anyway. I've got a tutor like that at the moment . . . it's no good at all . (Physics)

As long as I'm doing a subject that I'm interested in, it doesn't really matter to me how they do it . . . I prefer departments to be organised and efficient, and also, more important, that's caring about their students. That to me is more important than the procedure of the coursework, you know . . . (English)

Commitment to the subject area—and hence, enthusiasm on the lecturer's part—may also encourage a positive attitude in students.

If they [tutors] have enthusiasm, then they really fire their own students with the subject, and the students really pick it up . . . I'm really good at and enjoy [one subject] but that's only because a particular tutor I've had has been so enthusiastic that he's given me an enthusiasm for it and now I really love the subject. But at the beginning of [another course] the tutor was . . . a little bit passive for my liking . . . something imaginative was lacking, there was something lacking in the seminar group . . . (English)

The ability to teach at the student's own level, and lecturing ability in general, are also relevant.

We had a problem sheet to hand in for yesterday, which was really hard because the guy that's lecturing to us is really terrible . . . He's given equations and in the lecture notes there's nothing about them, because he just goes on and on and mumbles to himself – nobody likes him at all . . . Then you're asked questions on it, you don't know where to start. (Physics)

My criticisms will be very closely aligned to, I think, the lack of empathy that some of the staff have about the ability levels of the students relative to their subject. Not relative to being able to be good enough to be at university, if you like, but relative to the fact that the concrete knowledge that they have is virtually nil in some of the areas that we're talked at, at a very high level. So you can't attach anything that you've been told to something that you already know, which of course is a very important point in learning . . . I think it's the overall problem of the experts coming in and having to give courses in a few weeks on their particular interest, and they have such a wealth of knowledge in that area that they start at too high a level. That's what I think happens. They've gone so far into their own area that they've forgotten that we know nothing, essentially, compared with them. (Psychology)

The concepts are really difficult anyway. It usually takes, I think most people like, I certainly like to sit down on my own and go at my own speed. Now the lecturers certainly assume that we know it and they just keep going. People can say, "slow down" but people of course are reluctant to say they don't

understand it. So he tends to keep going, and once you get behind it, you know, you can't really get back on terms. (Engineering)

Providing useful feedback on a student's work also influences learning, in these students' experiences. Lack of information about performance makes further learning more difficult.

You give an essay in – I gave in two at the beginning of the second term and I didn't get those back till this term . . . you know, it's a bit difficult when you're writing the next essay, because you want to know where you've gone wrong and the points that have been all right . . . By the time you've got it back after waiting a whole term you've forgotten what it's all about and it doesn't really mean much then. (English)

Lecturers also have a great deal of say over the amount of structure, and over the balance between teacher and student direction, in their programmes of study. There is a vital connecting link here between what teachers in higher education do and how students approach learning, as the second part of the Lancaster study will show. We have already seen how interest in the learning task for its own sake tends to evoke a deep approach. Logically, interest in the task is likely to be greater if the student has a favourable attitude towards the subject-matter to which it refers and if the students perceive themselves to have choice over the content and method of study. The ideas of choice of subject matter and freedom in pursuit of knowledge are threads running through the history of higher education (see, for example, Dewey, 1916; Whitehead, 1932) although the application of freedom in learning to undergraduate education, except in its latest stages, is unusual.

These extracts from interviews of students undertaking independent studies programmes suggest a connection between learning contexts which offer choice in both learning topics and study methods, and favourable attitudes towards studying.

If you're doing independent studies you're obviously interested in what you're doing. Therefore you're in a much more relaxed mental state for approaching work: I am, anyway, and other people I know in the course are.

In reading a particular bit of the book that I thought was relevant I was relating it to the overall arguments within the book . . . and also relating it to the overall directions of the independent studies project I was doing. But that particular approach was a product of my desire to sort of do a bit of creative, original work. Had I been writing a straight essay . . I probably would have just, sort of, taken out the main points and strung them together in a typical essay form. So I think there's a definite difference between reading a book with the objective of simply summarising the argument and reading a book with the objective of using those arguments for your own ends.

On the other hand, freedom in learning brings with it greater responsibilities. Lack of structure and clarity in the goals of study may defeat the intentions behind greater choice, at any rate for some students.

You have to take responsibility for the work yourself. You're not, you don't have the advantage of a pre-existing framework of suggested reading and suggested approaches in independent studies, so you have to be damn sure that you are interested enough and confident enough to see it through those times when you come to sort of minor crises, when you realise suddenly that it's all on your shoulders and you've got no-one else to go to . . . It requires commitment and personal motivation.

There is by no means a simple equation linking less structured learning contexts with more effective learning in higher education; there are likely to be particular difficulties for anxious students, as we should expect from studies of the school learning context (see, for example, Wade, 1979). But the wide variation in styles of learning preferred by students, together with the logical and empirical links between interest, approach and outcome, suggest that variety in the mix of learning tasks and some choice over subject matter is desirable.

The Context of Leaming in Different Subject Areas

Even the casual observer of higher education cannot fail to notice that important differences in the context of learning are associated with different subject areas. It is clear from previous research that contrasting academic departments are inhabited by different kinds of lecturers and students. By far the most pervasive contrasts are between arts and science subjects, and between professional and non-professional courses. It appears that lecturers in science departments are more likely to prefer formal, structured approaches to teaching and assessment; in arts and social sciences, teachers endorse more flexible and individualistic methods. Not surprisingly, the students in the different types of department have complementary attitudes, while the students' perceptions of departments in the contrasting subject areas also correspond closely to the differences in lecturers' approaches to assessment and teaching (Gaff, Crombag and Chang,1976). But are the students' approaches to studying related in some systematic way to the different attitudes and demands current in different subject areas? Whether these different demands are essentially culturally determined or in some way inherent in the subject-matter of different disciplines is not important here: our concern is with the different perceptions of students in different subject areas.

Students interviewed in the Lancaster study (Ramsden, 1981) were asked to identify possible differences in approaches to learning and learning contexts in different subject areas. Not unexpectedly, the dominant contrast made by these students was between science and arts disciplines. Their comments reveal consistent, subjectively-defined differences between the types of learning expected in the different subject areas. Science and arts students agree on what the differences are. Learning tasks in science are typically described as hierarchical, logical, heterogeneous, and rule- and procedure-governed.

They [science students] go about it more logically . . . you get this impression of the history student being airy-fairy and tempera mental . . . scientists deal in fact, while history students and artists deal in theory—we discuss theories and opinion. (History)

It's much more—exact isn't the right word—but in Physics you're right or wrong . . . here you can't think it, it happens. (Physics)

But for the sciences, they have to be more calculating, they have to know logical concepts, they have to know logical things and how an answer will come out of a calculation or a few statements which have been written down. (English)

A lot of our stuff is just sort of, you know, teaching us a logical flow of arguments, observing certain results, concepts and how they're related, whereas . . . (Physics)

Arts and social science tasks are seen to require interpretation, comparison, generalisation, and to be more self-governed and easier.

[Arts students] seem to have a much easier time of it. They read a lot more, of course, they've got to read all these books, but . . . it seems much easier . . . it seems to be just going on and on about what you yourself think . . . In these other subjects you can just sort of go on and on: "I think this, I think that". (Physics)

The work demands, in a way, a completely different intelligence. For us it's more interpretation, more analysis, more penetration into the material . . . They have to look ahead to an answer: we have to look in . . . For English you have to see implicit meaning. (English)

History, you can waffle, you can cover up your mistakes . . . no-one can either prove you right or wrong . . . you've got to take all things into account. (History)

A lot of [History] is just hypothesis, why did this guy do this? and so on – it's a lot less certain. (Physics)

The most revealing thing about these interview extracts is that they mirror with surprising accuracy the theoretical constructs we met in Chapter 8 – operation and comprehension learning (Pask, 1976). The manipulation of concepts and objects within the subject-matter domain, the emphasis on procedure-building, rules, methods, and details are characteristic of operation learning and the science approaches described by the students. The description and interpretation of the relations between topics in a more general way is the defining characteristic of comprehension learning and is related by these students to typical approaches in arts and social science disciplines.

These differences are in turn related by the students to the different demands of the context of learning in arts and science departments (see Ramsden, 1981). Formal teaching methods, limited choice of topics, clear goals for learning, and vocational relevance, are associated with operation learning and science departments; informal teaching methods, unclear goals, and so on, are related to arts and social science departments and comprehension learning styles.

It should be emphasised that we are not maintaining that these differences are immutable differences between subject areas. They are students' perceptions of differing demands and reveal a good deal about how the typical learning tasks set

in arts and science departments are interpreted by students. For full understanding of any complex subject matter, according to Pask, *both* styles of learning need to be employed. Of course, the differences described above are students' stereotypes and further research is needed to discover more about how specific academic tasks are seen to be presented in different disciplines. But it may well be that differing disciplinary emphases inhibit, at least for some students, the development of a versatile style of learning in which both comprehension and operation learning are appropriately used. At its logical extreme, this perceived bias in tasks typically set could lead to science students being unable to describe the meaning of what they know, and arts students being incapable of deductive reasoning.

The next step in examining the relationship between subject area contexts and approaches to studying is to ask whether deep and surface approaches to learning reveal themselves differently in different contexts. Marton's original distinction between deep and surface approaches was derived from analysis of interview protocols in which students described how they read an academic article (see Chapter 3). Laurillard has found an equivalent distinction in approaches to problem-solving, and parallels with these categories can also be seen in relation to listening to lectures and writing essays. In normal studying the surface approach implies not only a concentration on words or details to the detriment of under standing, but also an over-awareness of assessment demands which leads to an intention to reproduce knowledge. In the Lancaster interviews both deep and surface approaches in normal studying were found clearly, but were expressed in different ways in different subject areas, because of the requirements of typical learning tasks in the different contexts.

From the interviews it emerged that even a deep approach to learning tasks in science departments often demands an initial concentration on details which is empirically hard to separate from a surface approach. This means that the descriptive category needs to be redefined somewhat in order to include this prior stage. In the humanities, in contrast, a deep approach is revealed more commonly by the student stressing, right from the start, an intention to re-interpret the material in a personal way. In describing surface approaches, science students are more likely to stress an over-concentration on techniques and procedural details, while the arts and social science students tend to report a more generalised, vague approach—oversimplifying in reading or essay-writing, or memorising unrelated generalities in their preparation for assessments. These differences in emphasis in deep and surface approaches show how the meaning of this fundamental dichotomy has itself to be understood in terms of the context in which approaches to learning are realised.

Study Orientations and Perceptions of Academic Departments

Although it is clear that the same student may use both deep and surface approaches on different occasions, there was evidence from the interviews that students also showed general orientations to studying. These general tendencies to adopt particular approaches to learning have been found to be associated with characteristic forms of motivation and attitudes to studying (Ramsden and Entwistle, 1981; Entwistle and Ramsden, 1983). Two of these orientations, meaning

TABLE 13.1
Categories in the Approaches to Studying Inventory

Meaning orientation	
Deep approach	Looks for meaning; interacts actively; links with real life.
Use of evidence	Examines evidence critically and uses it cautiously.
Relating ideas	Actively relates new information to previous knowledge.
Intrinsic motivation	Interested in learning for its own sake.
Reproducing orientation	
Surface approach	Relies on rote learning; conscious of exam demands.
Syllabus-boundness	Prefers to restrict learning to defined syllabus and specified tasks.
Fear of failure	Anxious about assessment demands; lacking in self-confidence.
Improvidence	Not prepared to look for relationships between ideas; fact-bound.
Strategic orientation	
Strategic approach	Tries to find out about assessment demands; seeks to impress staff.
Extrinsic motivation	Qualifications as main source of motivation for learning.
Achievement motivation	Competitive and self-confident; motivated by hope for success.
Non-academic orientation	
Disorganised study methods	Organises time ineffectively; not prompt in submitting work.
Negative attitudes	Little involvement in work; cynical and disenchanted about courses
Globetrotting	Too ready to generalise and jump to conclusions without evidence.
Styles of learning	
Comprehension learning	Holist strategies used to build up an overall picture, intuitively.
Operation learning	Serialist strategies used to concentrate on detail and logical analysis.

orientation and reproducing orientation, are conceptually similar to the deep and surface approaches, even though they describe relatively consistent tendencies in individual students.

The study orientations, however, are not assumed to be unchanging characteristics of students: just as students change their conceptions of learning over time, so they may shift their study orientation during a programme of higher education. This raises an intriguing question at the most general level of the relationship between the context of learning and students' approaches to learning: is the context of learning in different academic departments systematically related to their students' study orientations? The qualitative analyses of students' approaches in relation to their perceptions of teaching and assessment suggested that it should be possible to identify such a relationship. We might expect, for example, that departments perceived to have excessive assessment and syllabus demands would create reproducing orientations (corresponding to surface approaches) in their students.

A complicating factor is the discipline taught in a department. Study orientations vary from one subject area to another, just as the meaning of the deep and surface categories differs in different subject areas. However, the teaching and assessment policies do differ between departments teaching the same discipline and so relationships with study orientations may still be observed.

Such relationships could only emerge from an analysis of a substantial number of departments and a much larger number of students. Partly as a result of earlier work at Lancaster, and partly from the research of Biggs (1978) and the ideas of the Gothenburg researchers, an inventory of approaches to studying was developed suitable for administration to large samples of students (Entwistle *et al*., 1979b; Entwistle and Ramsden, 1983). The inventory asks students about their general approaches to academic work in the normal context of their main courses. By item and conceptual analyses the questions can be grouped into a number of scales, and these are shown in Table 13.1 above. For our purposes here, the important scales are those making up the meaning and reproducing orientations.

The Lancaster research also made use of a questionnaire of course perceptions, with eight sub-scales (Table 13.2), which are the main categories used by students when they describe the context of learning in an academic department. The fact that students can respond to general questions of this sort, both in the questionnaire and in interviews, suggests that students are able to perceive general differences in teaching and assessment in departments in addition to specific differences between different lecturers within departments.

The scales of the course perceptions questionnaire divide into two main groupings. One of these – formal teaching methods, clear goals and standards, and vocational relevance – differentiates mainly between science and professional studies departments, and the rest. The second main grouping describes students' evaluations of the quality of the learning context in their department. Good teaching, freedom in learning, and staff openness to students are the defining characteristics of this evaluative dimension, with social climate and light workload playing lesser parts.

The inventory and course perceptions questionnaire are quantitative research

instruments, but this does not mean that their use violates the assumptions of the perspective adopted in this book. They remain close to students' experiences of learning, as the constructs and items were derived from interviews rather than from a pre-existing body of theory. Our research strategy deliberately used an alternation of qualitative and quantitative methods. Of course the questionnaire results cannot tell us anything directly about the influence of the learning context on students' orientations: but empirical associations can be interpreted as functional relationships when seen in conjunction with the students' interview comments on what had influenced their approaches to studying.

TABLE 13.2
Categories in the course perceptions questionnaire

Evaluation of the department

Good teaching	How much help is given with study problems; how competent and well-prepared staff are perceived to be.
Freedom in learning	How much discretion students have over the choice of content and methods of studying it.
Openness to students	How friendly staff are; how prepared they are to adapt to student needs.
Workload	How heavy the pressure to fulfil the requirements of the syllabus and assessment is perceived to be.
Social climate	Quality of academic and social relationships between students.

Subject area differences

Formal teaching methods	Importance placed on lectures and classes relative to individual study.
Clear goals and standards	How clearly the standards of assessment and ends of studying are perceived to be defined.
Vocational relevance	Perceived relevance of the courses in the department to the students' future careers.

Let us now look at these results, which have been described in detail elsewhere (Ramsden, 1981; Ramsden and Entwistle, 1981; Entwistle and Ramsden, 1983). The inventory of approaches to studying and the course perceptions questionnaire were administered to 2208 students in 66 departments. The disciplines included were physics, engineering, economics, psychology, English and history. The two main study orientations (meaning and reproducing) could be identified in all the subject areas. These orientations were found to be related to students' perceptions of the context of learning in a way which was quite consistent with the interview results. Departments which were perceived to provide good teaching (and particularly help with studying) combined with freedom in learning (choice of

study method and content) were more likely to have students reporting an orientation towards meaning. Reproducing orienta tions were more commonly found in the departments perceived to combine a heavy workload with a lack of choice over content and method. These relationships were not affected by the differences in students' entry qualifications in different departments, nor by subject area.

These results fit neatly into the findings of the experimental and interview studies which had related students' perceptions of learning contexts to their approaches to studying. Moreover, students' attitudes to studying in the departments were associated with their perceptions of the quality of the learning context. Just as students in the Lancaster interview study described relationships between effective teaching and positive attitudes to studying a topic, so the students in the survey who were working in departments that were evaluated highly were more likely to report involvement with their work. In contrast the students in the negatively evaluated departments were more likely to report cynical and disenchanted attitudes to higher education.

A second similarity in the findings from contrasting research methods is concerned with the strength of the association between students' orientations and their perceptions of the context of learning. Marton and Säljö (1976b) had showed that surface approaches to learning were relatively easy to induce in students, while deep approaches were difficult to encourage (Chapter 3). Just as we would expect from these findings, the survey analyses revealed that it was much easier to predict which departments would score highly on reproducing orientation than on meaning orientation. In other words, some departments seem to induce surface approaches in a direct way. Other departments appear to provide contexts within which students find it easier to develop an interest in the subject matter and to use approaches aimed at understanding. The influence is, however, less easy to predict, depending presumably more on the individual students. As we saw in Chapter 5, students differ greatly in what they want to achieve from their studying. If they want to make the academic content personally meaningful, these departments will facilitate such development.

Conclusions and Implications

In this chapter we have seen how important relationships between students' experiences of the learning context and their approaches to studying have been revealed by recent research. The findings have some significant implications for teaching in higher education. The detailed implications for practice are discussed in Chapter 15 in relation to the other work reported in this book; some aspects of more general relevance are considered here.

In these results are the beginnings of a model of student learning in context. The relationships are complex but should be to both teachers and students. At the most general level, we have seen how students' perceptions of assessment, choice over subject matter and methods of studying it, workload, and quality of teaching in academic departments are related to the main study orientations. The

departmental context also plays a part, it would appear, in influencing students' attitudes towards studying – whether they feel that academic work is worthwhile. Previous research had shown clear links between inappropriate and excessive assessment demands and surface approaches. This effect is confirmed by the data from the departments in the survey. However it now also seems clear that some departments provide a context which facilitates the development of a meaning orientation. Further study of the detailed differences between these different types of department should reveal how changes in teaching and assessment procedures might discourage a reproducing orientation and allow deep approaches to emerge.

Students' experiences of teaching and assessment influence their approaches to learning, both directly and indirectly. Thus interest and commitment to a subject area can be fostered by certain experiences of teaching and by perceived freedom in learning, and intrinsic interest is fundamentally related to a deep approach. Inadequate previous knowledge of a topic, itself partly a consequence of inadequacies in teaching, and the anxiety created by insensitive teaching or an over-demanding syllabus, push students towards a surface approach, as a coping ploy.

This model is complicated by the need to consider subject area differences. It appears that there are systematic differences in students' perceptions of appropriate ways of learning in arts and science disciplines, and we have also seen how the meaning of the deep-surface distinction shifts in relation to students' reports of their experiences in different subject areas. The disturbing implication of this part of the research is that at least some students may be handicapped in the development and use of both operation and comprehension learning styles by the dominant culture of the discipline in which they are being trained. This is not a question of whether one style of learning is objectively more appropriate to some inherent characteristics of the subject-matter, but rather of how the tasks set in an undergraduate arts or science course may be biased towards the use of one or the other style. As both styles are characteristic of versatile and competent learners, it is important that learning tasks are seen by students in all subject areas to require the development of both styles. Scientific thinking does indeed involve much attention to details, logical analysis, and strict adherence to procedures, but it also requires students to interpret data in relation to their own experience. Similarly, personal interpretation and description certainly are important in the humanities; but so is the ability to analyse evidence rigorously. If the perceived context of learning overemphasises one style, then students may develop inadequate approaches to learning.

These arguments suggest that greater variety in learning tasks, and in forms of teaching, would probably be beneficial to students in all subject areas. One way of providing this variety is by increasing students' choice of method and content. As we have already seen, freedom in learning is valued by students in all subject areas and is related to deep approaches to learning. Freedom of choice, however, should be complemented by a provision of clear frameworks within which that choice is exercised. Unstructured freedom is unlikely to develop versatile learning skills.

The single most important message to emerge from these research findings is that intense effort must be made in course planning, and in the setting of assessment questions, to avoid presenting a learning context which is perceived by students to require, or reward, surface approaches. It is not enough to assume that course materials or assessment methods will encourage students to think deeply about the subject matter, however carefully they have been designed: it is necessary to consider the students' perspective on what is required. It is useless, for example, simply to tell students that verbatim reproduction of information in an examination is wrong, to expect this warning to discourage surface approaches, and to blame the students when it does not. If students feel that there is insufficient time to study the examined topics properly (perhaps because of the demands of other courses), or if they have experienced inadequate teaching, or if they are given high marks for reproducing lecture notes, or if their previous knowledge within the area is insufficiently developed, then they will feel constrained to use surface approaches. Only by studying the internal relationships between how students perceive course demands and how they approach studying can the complexity, and apparent paradoxes, in student learning be understood.

This indirect connection between how lecturers teach and how their students learn has a crucial implication for how we should try to develop teachers' competence in higher education. It suggests that staff develop ment programmes should aim not only to improve teaching skills, but also to increase lecturers' awareness of their students' experiences of learning. In the last analysis, these two facets of staff development are inseparable. Good teachers have to be aware of their students' needs and purposes, sensitive to their students' perceptions of the course—and adapt their teaching and assessment methods accordingly. Our attention should be on the quality of learning, not simply on how to improve the techniques of teaching.

This emphasis on the effects of teaching is, however, not intended to remove responsibility entirely from the student. On the contrary, the decision to use different approaches to studying is largely in the student's own hands. Different students want different things from higher education and respond differently to similarly perceived conditions. Some cope better than others with adverse assessment and teaching conditions, and only part of the variation in the quality of learning is explained by contexual influences. But it would be a mistake to try to force a dichotomy between student characteristics and context in understanding how students learn: If we accept that individual students' learning skills will affect which approaches they use, and whether they achieve their goals, we should also recognise that learning skills are themselves influenced by previous experiences of learning contexts.

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