Chapter 8

Student Learning

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INTRODUCTION

The other chapters in this handbook look in detail at various aspects of the work of a tutor or demonstrator and the skills of teaching. This chapter has a rather different focus. It steps back from the role of the teacher to look at how new undergraduates may view and respond to tutorials, practicals and other aspects of academic life.

As researchers and teachers we have undergone a lengthy initiation into the ways of the academic tribe, and we have a very detailed knowledge of the ground rules which govern debate and enquiry within our individual disciplines. The skills and procedures that we use as a matter of routine in our academic work and the standards that we employ to judge the quality of research in our discipline seem a natural, unproblematic, part of our life. It is difficult, therefore, for us to recapture just how new and strange an environment university seems to many entrant undergraduates, or the feelings of challenge, even threat, that they may experience. One simple, but far from trivial, theme which runs through this chapter is that matters which may appear transparent to us as academics can be quite opaque to many undergraduates. There is a need to give a very explicit account of the skills that are required to be a successful student in a particular subject and the criteria that are used to judge success or failure. It will be argued that tutors and demonstrators have a particularly crucial role to play in making explicit the demands of academic life and in delineating the skills that students are expected to acquire.

The importance of communicating expectations to new students in a clear, detailed fashion is highlighted when one considers the diversity that exists in their prior experience. Some students will have gained a fairly accurate general picture of the nature of university life from school and family,

while others will have only a very vague impression of what is expected of them. It is necessary to give all beginning students a very clear account of how they are expected to study, debate and write, if the effects of these initial inequalities in preparation for university life are to be reduced.

In addition to diversity in past educational experience, there are important differences between students in their abilities, their level of confidence in their own abilities, their approaches to studying, their purposes in studying and their conceptions of learning. This chapter will explore the nature and the effects of differences between students in their purposes in, and perceptions of, studying. A number of key ideas, from the large body of research that has been done into student learning in higher education, will be presented to illuminate the way in which different students view and approach studying. These ideas will, it is hoped, provide a useful framework for developing an appropriate teaching approach with first year students in particular, and for guiding the direction that is taken in giving advice to individual students on study-related matters.

THE STUDENT'S PERSPECTIVE

Conceptions of Learning

The way in which students adapt to the demands of university life is powerfully mediated by their own conceptions, beliefs and purposes. A very important influence on the way that a student goes about studying is the conception she or he has of the nature and purposes of learning. Interview studies in which adults are asked what learning means to them have found qualitatively different conceptions.[1, 2] Learning was viewed as:

1   a quantitative increase in knowledge;

2   memorizing;

3   the acquisition of facts, methods, etc. which can be retained and used when necessary;

4   the abstraction of meaning;

5   an interpretative process aimed at understanding reality.[3]

In the first three conceptions in this hierarchy the accent is on the straightforward acquisition of discrete pieces of knowledge and on simply *reproducing* information. It is not recognised that the material which is to be learnt may need to be interpreted and transformed. Learning does not involve any challenging change.

The last two conceptions imply the existence of a much more *active* learner – one who is engaging deeply with a text or a problem, incorporating new information with previous knowledge and achieving a satisfying personal sense of understanding.

Approaches to Studying

A related set of differences has been found in the *intentions* which students pursue when they are engaged on an academic task. The purpose that a student has in mind, say in reading an academic article, will affect the way that she or he goes about the task and the quality of understanding that is achieved. The term *deep approach* has been used to describe the type of learning that is associated with an intention to understand material for oneself and to interact in a critical, engaged way with content.[4,5] When students start out with this intention, they are concerned to relate new ideas to existing knowledge, to examine carefully the logic of arguments and to find organising principles to integrate their thoughts.

A very different intention guides a student who is taking a *surface approach* to a particular academic task. The intention in this case is simply to reproduce parts of the material that they are studying, and there is a much more passive acceptance of facts and ideas. Students who are adopting a *surface approach* to a task focus on memorising facts and procedures in a straightforward manner, and do not actively seek out guiding principles or structure in the material that they encounter. They fail to reflect on their purposes or learning strategies.[6]

Making Expectations Explicit

The research findings which have been reviewed in the past few paragraphs bring into focus the fact that teachers and students may not share a common goal. Some students may need to be given the opportunity to stand back from their everyday efforts, and be encouraged to reflect on their own conceptions of learning.

It can be made clear to students, through discussion and comments on written work, that a surface, reproductive approach to a topic is not viewed as sufficient within higher education. On a more positive note, students may be alerted to the expectation that they should engage in an active dialogue with a teacher or author and use this process of interaction to develop a new understanding of particular topics. A shared understanding also needs to be established of the purposes of tutorials and practicals and the expectations and conventions that govern student participation. These are dealt with in chapters 3, 4 and 5.

Learning the Discipline

In addition to gaining a general sense of the purposes that individuals are expected to pursue in studying at university, students also need an explicit account of the criteria that are used to judge understanding within a particular discipline. This theme is highlighted and pursued in detail in chapter 6, *Marking and Commenting on Essays.*

Tutors and demonstrators also have a very important role to play in enabling students to develop a *detailed* sense of how to go about learning in a particular discipline. Books or leaflets on study skills can be of great benefit to students, but they have certain inherent limitations. Their advice necessarily has to be very general in its form, and they very often do not specify exactly how their sensible, general guidelines can be put into practice. A study skills booklet which I read recently advised students to take only "relevant" notes. No one is likely to quarrel with this common-sense piece of advice; but for a novice in a subject it may be very difficult to put this principle into practice. Sorting out what is, or is not, relevant from a mass of new information can be a very problematic business.

Teachers can demonstrate in a fine-grained way, using very specific tasks, how an entrant undergraduate can direct his or her efforts in a relevant fashion. They can indicate clearly *which* topics should be given priority and *how* one is expected to engage with these topics. Students will gain much information on what is appropriate practice in a discipline in a somewhat indirect

fashion by, for example, observing the choice of topics for a tutorial, how the tutor chooses to address these topics and the way in which debate proceeds within a tutorial. On occasions, though, it may be necessary to model in a very explicit fashion how to set about the task of essay-writing, read a complex graph, score, picture or sculpture or make sense of a set of figures contained within a table.

Developing Subject Knowledge

Aside from helping to hand on the skills required for successful practice in a discipline, tutors and demonstrators can diagnose misconceptions of key concepts and move students towards a richer, more complex, understanding of subject-matter. There are opportunities within tutorials and practicals both to gain a reasonably clear sense of how students are viewing a topic and to articulate a more authoritative conception of that topic. This does not, however, imply a straightforward, one-way transmission of a more 'correct' view of a piece of knowledge to a group of students. In contrast, successful teaching and learning, like everyday conversation, requires constant adaptation to the other person's position. Students have the responsibility to wrestle to make sense of new material, including the points that a teacher is attempting to communicate. Teachers for their part have the responsibility of continually monitoring and carefully tailoring contributions to ensure that the ideas they are presenting are accessible to a student, or group of students.

Skilful teachers will on occasion take a term from a student, or a short statement in everyday language, provisionally accept this term and then proceed, sometimes in quite a gradual manner, to reformulate the student's statement in a more technically correct or discipline-appropriate manner. It will often also be useful to act in the opposite direction, and ask searching questions about key terms and concepts, to ensure that students have a very precise sense of their meaning and application. By a careful and non-threatening process of questioning, a teacher can get students to communicate their understanding of central concepts in the lecture blocks that they are studying at a particular time. It is then possible to repair or to refine their understanding of these terms.[7]

Successful teaching, then, is likely to involve an interplay between *taking out* an expert's view of a subject to students in terms that novices are likely to understand and *drawing in* students' more common-sense understandings towards expert positions within the discipline.

Problems in Understanding

One of the many functions tutorials can perform is that of allowing students to raise problems that they are having with some aspect of the content of their course. To allow exploration of problems in understanding to take place the tutor needs to schedule some time for this activity and to foster a group atmosphere in which students feel free to say that they do not understand something.

It can be difficult for someone who is new to a subject to articulate the nature of the difficulty that he or she is facing. An academically able second year student whom I interviewed, commented on the problems that students may have in the early stages of their undergraduate career in raising difficulties:

> It's all very well saying to people "ask whatever questions you want" but very often when you come to university, you don't know what questions you want to ask. So there'll be embarrassed silence and somebody'd ask when the next exams were. But that wasn't the information that we really needed to know.

As I went on to discuss this statement with her, it became clear that she was articulating a distinction between knowing that you are facing a difficulty and having a more clearly formulated problem that someone else has helped you to construct.[8] It may be necessary to assist in shaping the problem that a student is experiencing. Although it is reasonable to expect students who are well advanced in their knowledge of a subject to take on full responsibility for communicating their problems, tutors may need to take a more pro-active approach with students who are novices in a subject.

STYLES OF LEARNING AND TEACHING

Turning to another area of research that is very relevant to everyday practice, it has been found that there are distinct differences between individuals in their style of working through an academic task. Two students (or teachers for that matter) may work on the same topic and achieve a comparable level of understanding, but reach this outcome by taking quite different routes through the material. A distinction has been drawn between *serialist* and *holist* learning styles.[9] The serialist prefers a fairly narrow focus on the material that is to be mastered, building up understanding in a step-by-step logical manner. In contrast, the holist sets out to learn new

material by attempting to gain a broad overview of the topic and delights in illustrations and analogies.

Another style of learning in which individuals use both global and analytical processes where appropriate is termed *versatile*. This versatile style, it is suggested, is best suited for achieving a high quality of understanding.

Problems can arise if there is a marked mismatch between the learning style of a student and that of a tutor or demonstrator. It has been noted that if teachers in higher education adopt extreme styles, either holist, or serialist, "it seems inevitable that students with the opposite style will find those classes uncongenial and difficult. Yet lecturers are free to indulge their own stylistic preferences, however extreme, while students have to make the best of relative degrees of mismatch with their own preferences".[10] To meet the marked contrast in student preferences concerning the structuring of learning, some variety in teaching is necessary. It also seems to be important to provide analogies and illustrations for the holist *and* sufficient structure and detail for the serialist.[11] Variety of experience over the course of their undergraduate career may also encourage students to adopt the *versatile* style of learning – the one which is best suited to meet the demands of studying at university.

In my own research on student views of tutorials, I have found marked differences between students in the way that they wanted tutorials to be structured. Some preferred tutorial talk which is clearly and fairly tightly focused on a topic while others preferred a more wide-ranging discussion.[12] These differences in the favoured structure for a tutorial can be seen to have parallels with the contrast which has been drawn between *holist* and *serialist* styles. To give a sense of how students commented on this matter, here are abridged quotes from two women students who were members of the same tutorial group.

> Student 1: I want it to be always very focused. — They are a waste of time if you just sit there and everyone just talks about what they feel like talking about.

> Student 2: I don't like that when tutors focus all the time because I think that's wrong — it is to me very important to understand the relationship between two things which maybe initially you don't think of relating but as you go to discussion you think oh maybe they are, and I think that's very important.

Obviously it is not feasible to have any direct matching of the learning/teaching style of a tutor and of the students in his or her group. However, tutors do need to be alert to the effects that adopting an extreme style of structuring discussion may have on some of the students in their group.

SELF-CONFIDENCE

The account that has been given so far of student learning has been a somewhat theoretical one. This concluding section of the chapter attempts to remedy that imbalance between thought and emotion and to turn attention to the, often powerful, feelings that are aroused by the need to deal with the uncertainties of a new environment. Whether individuals react fearfully, or with enthusiasm, to the challenges of a new environment is determined in large measure by the beliefs that they hold about their own ability to act effectively. People who have strong beliefs in their *self-efficacy* put more effort into new tasks and are more persistent in the face of difficulties. A firm sense of personal efficacy gives staying power.[13] This greater investment of effort does improve performance.

Conversely a lack of confidence and a fear-driven motivational style, in addition to making it harder to persist in a task, may lead to a lower quality of learning. It has been found that students who have a high *fear of failure* are more likely to adopt a *surface*, reproductive approach to learning.[14] Students are not likely to be drawn towards a view of understanding which stresses the active negotiation of new meanings if they have little confidence in their own abilities and worth as thinkers. If you lack the belief that you have something of value to contribute to others, you have little choice but to see yourself as a passive recipient of information and wisdom. A similar set of considerations applies to participation in tutorials. For the sense of self as a worthwhile participant in intellectual debates and sharing of ideas to emerge and be sustained, a learner needs to be given a 'voice' in the setting where he or she is learning and rewards for using that voice. Chapter 3, *Tutoring in Arts and Social Sciences* looks at ways in which less confident students can be encouraged to participate in tutorials and, it is hoped, thereby gain a stronger sense of their own ability to engage in debate.

Attributing Success and Failure

When we succeed, or fail, at a task there is a choice of ways in which we can explain the outcome. We can attribute success to more stable factors such as ability or to less stable factors such as effort and luck. Success can be explained in terms of *internal* factors such as ability, or effort, or to *external* features such as good teaching, or having an easy task.

Research studies have demonstrated clearly that attributing failure or difficulties to stable internal factors like ability can have a powerfully discouraging, demotivating, effect on learning. To give a concrete illustration of this general finding, a student who believes firmly that he or she does not have the ability to use computers may be very reluctant even to approach a keyboard. When students see themselves as lacking in the ability to use computers, it may therefore be important to help them to *reattribute* the source of their problems with computers or lack of willingness to use information technology. This reattribution might be to more easily changed internal features such as a *lack of effort*, or a *lack of relevant experience* or to external features such as a *lack of appropriate teaching/support*.

In the early stages of working with individual students who are experiencing difficulties in their studies, it is often very important to get a clear sense of how they themselves are accounting for the source of their problems. Where appropriate these students can then be given an alternative perspective on the origins of their difficulties and assisted to develop their skills in the ways suggested in chapter 7, *Supporting and Advising Students*.

Theories of Intelligence and Learning Goals

Pursuing the subject of perceptions of ability in somewhat greater detail, it has been shown that even in childhood individuals develop contrasting theories of intelligence[15]. Some individuals see intelligence as a *fixed trait*, and believe that they have a pre-determined level of mental abilities which cannot be readily modified, whereas other individuals view intelligence as a *malleable entity.*

Individuals who see intelligence as a fixed trait are very concerned with issues concerning ability. Their learning goals focus on gaining positive judgements and avoiding negative judgements of their intellectual competence. This close focus on their own abilities means that "confidence in their own ability must be high and must remain high if they are to choose appropriately challenging tasks and pursue them in effective ways". In contrast, individuals who believe that their abilities can be expanded and built up, have the goal of increasing their competence and focus on effort "as the means to accomplishment" and "the factor that engenders pride and satisfaction with performance".[16]

There are likely to be very distinct limits on the extent to which beliefs about ability, and associated goals, that have developed over a lifetime of schooling can be readily modified. However, the picture that teachers present of learning in a particular discipline is important here. If teachers stress that becoming competent in a discipline is a matter of gradually building up and refining a repertoire of skills, rather than the operation of some mysterious god-given talent, students are more likely to persist in their attempts to master new intellectual challenges. Similar considerations apply in developing individual students' competence in taking part in practicals or tutorials. Disabling beliefs such as "I can't think on my feet" or "I'm all fingers and thumbs" can be countered to some degree – by, for example, a tutor emphasising how skills are developed through practice rather than being innate. Chapters 3, 4 and 5 suggest various ways in which less confident students can be helped to appreciate that their communication abilities are much less fixed and limited than they had believed.

Which of these perspectives on student learning have you found helpful? In what ways were they helpful?

How might you put some of these ideas concerning student learning into practice within your own teaching?

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