Chapter 2 How students differ as learners

Graham Gibbs

Overview

Some of my students seem to focus on details all the time – they can’t seem to stand back and see the big picture, while others skate lightly across the surface and don’t get down to basics. What you really want is someone who can do both.

Students are often arriving with better study skills than they used to – some schools seem to be doing a good job – but they sometimes use these skills to do very odd things. It takes them a while to understand what higher education is about.

It’s the differences that make it interesting. Even in a small group you’ll get one student going about things in a completely different way from the others and that is what sparks ideas.

I’ve noticed that I seem to hit it off with other students who think like I do. As a woman from a working-class background, I find myself talking with like-minded people more.

By the end of the second year, some of them seem to get more strategic – more interested in the marks rather than the subject itself. Inevitably, I like working with the ones who are interested in the subject for its own sake who find it fascinating, as I do.

Students differ from each other in a great variety of ways and in any group you teach you are likely to be confronted with many dimensions of difference. Some students will be brighter than others and some will have better entry qualifications. They will go about their studying in different ways, using different skills. Students also have characteristic preferences and habits in the way they go about tackling any learning task put in front of them. They are also trying to get different things out of their time in higher education. Each of these kinds of difference is explored in this chapter.

The dominant model of teaching and learning in UK universities was developed when the vast majority of students were male and white, as were their teachers. Today, in many institutions, at least half of the students are female and, in some, half are from cultural backgrounds that at one time were previously hardly represented at all. In professional learning situations, the diversity of cultural backgrounds and the balance of gender have been changing, too. To what extent do teachers need to take these changes into account?

This chapter explores some of these differences between students so that you can better understand your students’ learning behaviour. There are sometimes clear practical implications, the most important of which is not to rush to blame students for the difficulties they encounter when they study. If you understand more about the nature of differences between
students, you will be better placed to adjust aspects of your teaching to suit them, to acknowledge their diversity and to help them learn more effectively.

**Activity 2.1 Diversity in your students**

Before reading further about how students differ, list in the box below five or more of the main differences you have observed between your own students. At the end of the chapter, you may find it interesting to return to this list to see if any of the explanations offered here provides insights into these differences.

| 1 |
| 2 |
| 3 |
| 4 |
| 5 |

Sections 2.1 to 2.4 cover four main questions:

- Do students differ in their intelligence?
- Do students differ in their study skills?
- Do students prefer to learn in different ways?
- Do students approach study tasks in different ways?

These sections are based on research in educational psychology, focusing on differences between individuals. They start with the more obvious explanations of differences, such as intelligence and study skills, and go on to more subtle, but arguably more important, differences involving learning style and approach to learning.

Sections 2.5 and 2.6, which are more sociological in nature, ask:

- Do students study for different reasons?

  Are there gender and cultural differences in how students learn?

These sections explore individual differences in a social and cultural context.

### 2.1 Do students differ in their intelligence?

Many teachers, if asked what makes most difference to how well students are likely to do in their studies, might say intelligence. They might add that how much they already knew, as judged by performance in their final examinations in school, such as A-level scores, would also matter. Most universities and colleges use A-level scores as their main, or even only, selection criterion.

Early research on student learning concentrated on characteristics of the students themselves, such as their intelligence and personality, and
attempted to identify which characteristics best predicted their success in higher education. The data in the Table 2.1 below are from one of these studies and show the extent to which various measures of student characteristics correlate with their degree results.

Table 2.1 Correlations with academic performance

<table>
<thead>
<tr>
<th>Variable</th>
<th>Universities</th>
<th>Colleges</th>
<th>Polytechnics</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-level score</td>
<td>0.32</td>
<td>0.39</td>
<td>-0.03</td>
</tr>
<tr>
<td>Verbal aptitude</td>
<td>0.11</td>
<td>0.13</td>
<td>-0.06</td>
</tr>
<tr>
<td>Numerical aptitude</td>
<td>0.07</td>
<td>-0.01</td>
<td>0.05</td>
</tr>
<tr>
<td>Motivation</td>
<td>0.19</td>
<td>0.23</td>
<td>0.23</td>
</tr>
<tr>
<td>Study methods</td>
<td>0.18</td>
<td>0.21</td>
<td>0.31</td>
</tr>
<tr>
<td>examination technique</td>
<td>0.17</td>
<td>0.18</td>
<td>0.16</td>
</tr>
<tr>
<td>Hours studied</td>
<td>0.19</td>
<td>0.19</td>
<td>0.19</td>
</tr>
</tbody>
</table>

Abridged from Entwistle et al., 1971, Table 5, p. 262

Several points are worth making about these data.

1 The largest correlations are those between A-level scores and student performance in universities and colleges (0.32 and 0.39), and between study habits and student performance in polytechnics (0.31). Each accounts for 10 to 15 per cent of the variation in student performance. This may not seem very much, as it leaves 85 to 90 per cent of variation in student performance unexplained, but it is not common to find correlations much larger than this when predicting student performance.

2 Most of the other correlations are rather low. While all correlations larger than about 0.1 in this table are ‘statistically significant’, they account for very little of the variation in student performance. For example, study hours explains only 4 per cent of the variation in students’ performance. There is clearly a lot more going on that these measures do not account for.

3 In polytechnics, A-level scores did not predict performance at all (with a correlation close to zero) and would therefore seem a rather poor way to select students.

4 The measures of intelligence, here described as verbal and numerical aptitude, correlated very weakly with performance. They accounted for only about 1 per cent of the variation in student performance.

5 At all three types of institutions several ‘process’ measures – study methods, examination technique and hours studied – correlated more highly with performance than did these measures of intelligence.

In other studies, it has been found that for some specific contexts, for example for some science courses at some universities, A-level scores are a rather better predictor of performance than is reported here: enough to justify their use for selection purposes. Other measures of intelligence have
also been found in some studies to correlate with student performance more highly than in the study reported here. In some courses the range of A-level scores is very narrow and measures of performance (the examinations) are flawed: both these factors would tend to reduce correlations. But, in general, what we know or can find out about students as they enter higher education, including about their intelligence, seems to give us relatively little idea of how well they will do. There must be other differences between students in the way they go about their studying which have more impact on their performance than the measures used in the above study. Sections 2.2 to 2.6 explore what some of these are.

One of the reasons for the low correlations between characteristics on entry and final degree results is that students change and develop during their time in higher education. These developments have a profound effect on how they study and how well they do.

You may have noticed that the data in Table 2.1 are over 20 years old, and refer to ‘polytechnics’, which became universities in the early 1990s. This line of research proved relatively unilluminating, and until recently, was more or less abandoned. One of the authors, Entwistle, went on to undertake the very different kinds of studies described in the sections below. Here he argues why the attempts to simply correlate characteristics of students with their performance have not been helpful:

... this whole line of research has been criticised for failing to suggest how the underlying traits (student characteristics) lead to the learning outcomes described. As a result there is little indication of what might be done to improve the situation. There is also a tendency to use a deficiency model of student behaviour, in which the blame for inadequate academic performance is attributed entirely to the student. It has taken an entirely different research paradigm to present the situation more fairly, as an interaction between the characteristics of the student and the experiences provided by the institution. The changed methodology involves looking at the situation from the students’ perspective using interviews and observations and qualitative, interpretative analysis.


Entwistle’s concern is not so much that the correlations are low, but that correlations can never tell us what causes good or bad performance.

In conclusion, students clearly do differ in their intelligence. However, the link between intelligence and either student performance or student study patterns is neither very strong nor very illuminating. Intelligence is therefore not as powerful a concept to help us with our teaching decisions as we might have expected.

2.2 Do students differ in their study skills?

It might seem obvious that some students are simply more skilful at studying than others. However, as we will see, study behaviour which at first seems explicable in terms of skills may turn out to have a range of other interpretations which throw more light on what is going on.
A movement in higher education in the UK in the late 1970s focused on improving students' study skills. Some students did not seem to know how to organise their studies, read effectively, write essays or prepare themselves for examinations. There are now dozens of 'how to study' books in campus bookshops. They all assume that there are technical skills that some students have and others do not that are crucial to success, and that these skills can be learned. For example, how organised a student is makes a measurable difference to his or her success, and good examination techniques seem to improve marks, whether or not they actually improve learning.

I spent some of my time in the early 1980s as a study skills counsellor at Oxford Polytechnic (as it then was) seeing students who had been referred to the counselling service because they were failing and were diagnosed as not knowing how to study. When I saw them, they would say things like:

I spend lots of time with my books but I don't seem to get anything out of it – can you teach me how to read more effectively and faster?

I find my lecture notes are not much help to me when I tackle the problems I am set to do – can you teach me how to take better notes?

Initially I accepted the students' self-diagnosis. I had all the study skills books on my shelf so I gave them what seemed like sound advice and sent them on their way. It didn't work. Much of the advice in these books was of doubtful value to students or was difficult or impossible to follow for a whole variety of reasons (Gibbs and Northedge, 1979). Also, students who are anxious because they are not doing very well are generally reluctant to abandon their existing methods – even if these are working rather badly – for completely untried alternatives. But problems with the advice itself were not the heart of the issue. I gradually realised that the study difficulties were not necessarily technical at all.

Extract 2.1 builds on this distinction between what we can observe our students doing as they study – their technical study skills – and the learning that is going on underneath. It explores alternative explanations of differences in the way students read in order to distinguish techniques from more profound underlying differences.
EXTRACT 2.1
WHAT DETERMINES HOW STUDENTS READ?

Graham Gibbs

Figure 2.1  Two student's read records
In summary, the difference between the ‘read records’ of Students A and B in Figure 2.1 in Extract 2.1 can be interpreted as a difference in reading skills. But they can also be explained in a variety of ways that are explored in more depth in other chapters of this book. Four alternative explanations are considered here.

**Explanation 1: The students are taking a different ‘approach’ to studying**

Student A was taking a *surface approach* (see Section 4), attempting to memorise by stopping every so often to note down facts which might come up in tests. Student B was taking a *deep approach*, trying to make sense of the material by getting an overview and relating one section to another, building up an argument. From this point of view these students differ in their intention, in what they are trying to do in that particular learning task. Any study method can be manipulated to serve the intentions of a surface or a deep approach and attempts to train students in study skills are not typically successful in changing their approach (Ramsden et al., 1986). Either of these students could read like the other one simply by having a different intention.

**Explanation 2: The students have a different understanding of what learning and knowledge consist of**

Student A understands learning to consist of picking up as many facts as possible and believes that knowledge consists of right answers to be learned. The read record reflects an attempt to accumulate knowledge. In contrast, Student B is more sophisticated and has a more developed understanding of learning as a process of making sense of the world. She understands that knowledge consists of alternative theories and explanations which have explanatory power in different contexts and the read record reflects an evaluative approach to the material. From this point of view these students differ in their conceptions of learning (Chapter 1, Section 1) and in their conceptions of knowledge (Chapter 1, Section 2). In time, Student A might develop into one like Student B.

**Explanation 3: The students have different ‘learning styles’**

Student A is a ‘serialist’, working step by step through an argument or problem with a focus on detail. In contrast, Student B is a ‘holist’, seeking an overview by moving lightly across the material, with a focus on overall patterns rather than detail (see Section 2.3, below). From this point of view, these students have distinct preferences or habits, or even underlying styles of thinking which, like personality differences, result in consistent behaviour across a range of situations. These styles might be equally effective, though they might suit some tasks or kinds of learning material better than others. Student A could not become like Student B, though he might be able to learn to imitate Student B’s style.

**Explanation 4: The students have different hunches about what will be assessed**

The difference is one of awareness of task demands. Student A is going about the reading in a way which prepares him for a test of facts while Student B is gambling on a test of understanding. They may be tuned in to cues about what counts on the course to a different extent: Student B might have tuned in correctly while Student A has either missed the cues.
or mis-read them. From this point of view, the difference in the read records is a consequence of each student's response to the assessment system. Student A could be more like Student B if he interpreted the assessment demands in the same way as Student B.

What at first appear to be straightforward study phenomena may have a range of alternative explanations. In the case of Students A and B it would have been necessary to interview them—about their approach, conception of learning and conception of knowledge, about their orientation to study, and about the way they responded to the assessment system—in order to make an informed choice from the four competing explanations described above. While students do differ widely in their study skills and are able to improve them, it is often not lack of skills which causes the learning problem, but one of these other underlying differences among students. Such differences tend not to be as amenable to training.

2.3 Do students prefer to learn in different ways?

Consider this account of two students tackling a computing problem on an engineering course:

Student C went straight to the computer keyboard and started keying in segments of a program. She didn't analyse the nature of the problem. As soon as it became clear that the program routines being written did not work, new routines were written out and immediately tested in a trial and error way: mostly error. This student had created dozens of programming routines, none of which got close to solving the problem. She seemed not to learn from her mistakes.

Student D became intrigued by the problem itself and its underlying features. She started reading about this kind of problem and the reading led her into related areas which also contained intriguing problems. She could talk animatedly about the topic in general in an abstract way but had not even started writing any programming code to produce a solution.

Gibbs, 1988

Kolb's experiential learning cycle is explained in Chapter 1.

These students were not going round the entire experiential learning cycle. For example, Figure 2.2 shows that Student C is going straight from the superficial reflective observation that the program she has tried out does not work, to a new plan for which she has no conceptual basis. The bottom half of the cycle seems to be missing. No matter how many times she goes round this half cycle she will not produce a complete working program. In contrast, Student D goes straight from conceptualisation to reflection without ever trying out her ideas in practice. No matter how many times she goes round this cycle, she also will not produce a working program. These represent extremes of learning styles, neither of which worked well to tackle the problem set.

These learning styles can become exaggerated if learners of the same extreme style are working together in a group. I once ran a workshop on experiential learning for lecturers during which everyone completed an experiential learning styles inventory. This is a questionnaire which measures learning style by identifying which part of the cycle is
emphasised by learners. I created three groups, each identified by the inventory as being particularly strong in one part of the experiential learning cycle: Group 1 in the top part of the experiential learning cycle, involving ‘concrete experience’, Group 2 in the bottom part of the cycle, emphasising ‘abstract conceptualisation’, and Group 3 emphasising ‘active experimentation’. Everyone with a more balanced style (identified by the inventory as close to the centre of the cycle) I made observers (see Figure 2.3).

The observers watched these three groups as they tackled the following problem:

You have been set up as a working group of Academic Board to tackle the problem of the theft of bicycles on campus. You have an hour to report back to Academic Board.

After an hour, Group 1 had identified 37 possible solutions and decided that the students could choose which one to implement. Group 2 were still debating the ethics of ownership (of bicycles). Group 3 had drawn up a
somewhat impractical rule to prevent theft and were working on
correcting the spelling.

The differences between the groups were marked, each revealing
distinctive strengths and also a lack of the style opposite to their own.
Group 1 had no conceptual basis for their ideas, which they had not
turned into plans. Group 2 lacked any practical application of what they
were discussing and Group 3 had just one idea and had not reflected on
the practicality of putting their plan into action. Differences between
students are seldom as extreme as this, but differences exist and have an
effect on students’ ability to tackle the variety of learning tasks they are
set. Kolb’s experiential learning cycle (Kolb, Rubin and McIntyre, 1974),
with its associated learning styles, is only a model of what is going on,
but is sometimes quite an illuminating model.

Do learners ‘prefer’ to learn in these ways? Experiential learning styles
appear to be based in habits or in meeting the habitual demands of tasks.
For example, nurses have been found to have a style emphasising the top
section of the cycle. In nurses’ working context, doctors often reviewed
patients’ progress (reflection), used their medical training as a basis of
decision making (abstract conceptualisation), and instructed the nurses
what to do next (active experimentation), leaving them only the concrete
experience of carrying out instructions. The experiential learning style of
these nurses was the consequence of the way they were employed and
not an inherent characteristic or a conscious preference. The way nurses
had adjusted to the demands of doctors can be compared to the way
students adjust to the demands of teachers. More recently, nurses’ training
tends to use the experiential learning cycle explicitly to develop problem-
solving nurses who have a balanced style and who can operate effectively
in each quadrant of the cycle – though they still have to cope with the
demands of doctors! Experiential learning styles can be changed by
changing teaching and learning methods so that different demands are
made: learning methods associated with each stage in the learning cycle
can also be learned.

There are, however, learning or cognitive styles which appear to be
more permanent characteristics of individuals (rather than related to
particular contexts) and which affect the way learners perceive problems
and go about tackling whatever learning tasks they are faced with. In
Extract 2.2 below, Schmeck pulls together a wide range of research on
cognitive styles and describes the one main dimension which seems to
account for most of the differences between students: ‘global’ versus
‘analytic’ styles.
EXTRACT 2.2
COGNITIVE STYLE

Ronald Ray Schmeck

Activity 2.2  Your learning and reading style

1 If students had a ‘global’ or an ‘analytic’ style, in Schmeck’s terminology, what kind of differences in their studying or their assignments might you notice?

2 What do you think your own style is, and does it affect your teaching?

3 What kinds of learners do you think your own teaching is more suited to?

On my course, Teaching in Higher Education, I might expect students with an extreme ‘global’ style to write broadbrush accounts of their teaching, making sweeping generalisations based on an intuitive review of a whole range of teaching experiences. In contrast I might expect a student with an extreme ‘analytical’ style to provide a detailed and careful descriptive account of an individual teaching session without perhaps drawing any general conclusions.

My own style is probably a mixture of the two. I don’t like very detailed analysis and get impatient for explanations and big ideas to emerge. I am also critical of broad ideas, which appear to have little detailed analysis or evidence behind them. I am not especially intuitive or oriented to feelings but neither am I very rigorous at step-by-step analysis.

I probably suit ‘middle of the road’ students and not the extremes at either end.

If these differences in cognitive style are relatively fixed, what implications are there for teachers facing a class inevitably made up of students with different styles? If your own style is extreme, for example, if you have an extreme analytic style, your teaching might be difficult for students with the opposite style (i.e. a global style) to cope with. They might find your arguments hard to follow or struggle with the type of assignments you set. You might look for logical step-by-step arguments in students’ assignments when you mark them and give poor marks to ‘global’ arguments.

In a study of the preferred learning styles of students and preferred teaching styles of teachers, which used Kolb’s model (Dixon and Woolhouse, 1996), engineering lecturers were found to have a strong preference for theory (the bottom section of the experiential learning cycle) and a low preference for action (the top section of the experiential learning cycle). Their students, in contrast, had exactly the opposite preferences. Such a mismatch is likely to obstruct student learning.

It is impractical to divide the class into students of different styles and to teach them differently. Apart from the logistical difficulties, most students have styles that are not extreme and most classes will probably have only a few at the extremes. You might end up suitings fewer students by teaching two courses aimed at extreme styles instead of one course aimed at average styles. Research on attempts to match learning to teaching styles has not usually demonstrated sufficiently
worthwhile gains in learning to justify all the effort. It is also more effective for learners to be versatile, rather than extreme and fixed in their styles, so they should be encouraged to adjust to varied task demands; though if underlying styles really are fixed, the scope for this may be limited.

The implications are therefore that you should be aware of possible differences in style between your students and not adopt too extreme a style yourself. You might want to mix your styles from time to time, sometimes using detailed analytic explanations and sometimes global overviews, drawing both kinds of students into your discourse. However, when working with groups it can be difficult to take style into account. It is much easier to do so in one-to-one teaching, such as during supervision or in assessment. You may want to offer alternative assignments, requiring either detailed logical work or broad overviews, which might be selected by students with different styles. And if your students hand in work that looks either woolly and lacking in detail, or too detailed and lacking in overview, you may be able to recognise a cognitive style at work, rather than incompetence, and be able to comment with some insight as to what is going on. Schmeck and others are clear that a ‘versatile style’, combining global and analytic attributes, is the most effective, and that is what we should be encouraging in our students.

2.4 Do students approach study tasks in different ways?

We have referred to ‘surface approach’ and ‘deep approach’ to learning a number of times in this pack. They are very powerful concepts, which help us to make sense of why some students understand more than others. Extract 2.3 below is written by the researchers who originally identified this distinction and I will leave it to them to explain what it means. The research they are describing here was undertaken in the late 1970s in Sweden and involved extended interviews with students who had been found to understand the meaning of an article they had studied in very different ways. Marton and Saljö (1997) had been reading and re-reading the interview transcripts to try to understand what it was that some students were doing which had led to such limited understanding in some cases.
EXTRACT 2.3
APPROACHES TO LEARNING

Ference Marton and Roger Saljö

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A difference in approach is a difference in intention: students are trying to do different things when they take a surface or a deep approach. This contrasts with descriptions of students' cognitive style such as in the work of Schmeck (see Extract 2.2, above), where students may be trying to do the same thing, to achieve the same learning outcome, but are going about it in very different ways. Approach tells you nothing about how effective a student is as a learner – a student may take a surface approach effectively and memorise a good deal or take a deep approach incompetently and understand very little. But they are still intending to memorise or make sense respectively.

Why does approach matter?

The approaches students take to learning tasks will have a profound effect on what they learn. Students who take a surface approach may perform reasonably well on immediate tests of factual recall but this advantage may be short lasting and they may remember less than those who took a deep approach as little as 10 days after. Their answers to questions tend to lack conclusions and miss the point. If they read an article with a principle-example structure, such as a case study, they will tend to remember the example but not the principle. They often score poorly on any measure of understanding and reveal weak and incomplete understanding of concepts or the main idea in a text they have read. Provided the assessment system measures understanding, they tend to get bad marks and poorer degrees. These findings are based on a wide range of research studies using different methodologies in different countries in different kinds of institutions.

Is a surface approach common?

Students take a surface approach to a considerable extent and it is not confined to weaker students, first-year students or lower status institutions or courses. Students have been found to take a surface approach to a greater extent in 'research' institutions than in 'teaching' institutions (Ramsden, 1983) and students at a conventional medical school in Australia have been found to progressively increase the extent to which they take a surface approach as they progress through their course (Newble and Clarke, 1986). It would be fair to describe a surface approach as endemic in higher education.

Several questionnaires have been developed, such as the 'Approaches to Studying Inventory', which measure the extent to which a surface or deep approach is being adopted on a course. The reliability of these questionnaires has been established and norms published for different subject areas, which allow comparison of students' approaches between different courses. The original work by Marton focused on individual instances of learning rather than on general trends across a course, but many students appear to be quite consistent in their approach across a range of tasks within a course, though they may vary between courses and may also vary between tasks within a course. As a result of the use of the questionnaires, we know a great deal about how common a surface approach is, where it happens and, increasingly, why.

Is approach fixed, like cognitive style?

Consider these two student statements about how particular learning tasks are approached. The first statement involves a description of a deep
approach to a geography course, while the second statement involves a
description of a surface approach to a computing course.

*Interviewer:* When you are going through and underlining,
what sort of things are going through your mind?

*Student statement 1:* Well I read it, I read it very slowly,
trying to concentrate on what it means. You have to really
kind of get into it and take every passage, every sentence,
and try to really think ‘well what does this mean?’ You
mustn’t regurgitate what David is saying because that is not
the idea of this exercise, so I suppose it’s really original
ideas in this one, kind of getting it all together.

*Interviewer:* When you use the word learning in relation to
this course, what do you mean?

*Student statement 2:* Getting enough facts so that you can
write something relevant in the exam. You’ve got enough
information so that you can write an essay on it. What I
normally do is learn headings. I’ll look at the next heading
and I know what I’ve got to write about without really
thinking about it really. I know the facts about it and I go to
the next heading and regurgitate.

Gibbs, 1992

These two statements actually come from the same student, within a few
minutes of each other, describing how he tackled two courses he was
taking in the same term – and he gained good marks in both courses. He
gained good marks on the course where he took a surface approach
because the assessment on that course rewarded factual recall rather than
understanding. Most students are perfectly capable of taking a deep or a
surface approach depending on what they think is appropriate, through
few are as aware and as strategic as this student. It is the context they are
in and the way they interpret it that determines which approach they will
take. So approach is quite unlike a fixed style – it is not a characteristic of
the student but a relationship between the student and the context.
Because some contexts are relatively homogeneous some students are quite
consistent in their approach, but this does not mean that they cannot take
different approach in a different context.

Many aspects of course contexts influence the approach students take, such
as class size, perceived assessment demands, and perceived workload. An
analysis of these influences, powerful as they are, lies beyond the remit of
this pack, but will be addressed in Packs 3 and 4.

**Are all students capable of taking a deep approach?**

Some students appear to take a surface approach all the time. When you
ask them about what they are doing when they are learning they have
trouble answering. They have taken learning for granted and have not
considered that there might be alternatives to what they do when they
study. This may have a basis in cultural experience, for example, related to
very formal educational systems stressing memorisation.

A student I counselled complained that he wasn’t getting anything out of
his reading. I asked him to explain exactly what he was doing when he
read the book that was in his briefcase and he answered, ‘Well I get to the
bottom of the page and then I start at the top of the next page. What do you mean how do I read?"

He appeared to have no awareness of different purposes of reading for different kinds of reading material or reading tasks. Some students have such an unsophisticated understanding and so little awareness of what is going on as they learn that they neither respond to differences in context nor have a repertoire of alternatives to choose from. These students seem incapable of taking a deep approach and attempt to memorise even when this seems a bizarrely inappropriate thing to do. This is not a permanent condition – students can learn about learning. See Chapter 1 for a more detailed exploration of the development of students’ understanding about what is going on – their ‘conception of learning’ – and the way this relates to approach.

Is a surface approach ever justified?

I have often heard lecturers argue that their students need to ‘know’ all kinds of things: terminology, formulae, names, dates and so on, and that it is therefore essential that they take a surface approach for at least some of the time. There are several problems with this argument. First, an intention to memorise results in relatively short-lived memory, while an intention to understand results in relatively good long-term memory. The type of revision that students do before final examinations, for example, is known to result in very limited long-term recall. In one study (Tans and colleagues, reported in Norman and Schmidt, 1992) students who had studied physiotherapy in a problem-based way, with no intention to memorise facts, recalled five times more concepts, six months later, than did students following a lecture-based course which attempted to convey facts. In other words, the best way to remember something is to try to understand it or use it, rather than to try to memorise it. Chapter 1, Section 1.3, deals with the way memory works and provides an explanation for this.

Second, students may not discriminate well between different components of a course. If they are being encouraged to memorise some parts, they may end up trying to memorise them all. A surface approach can engulf other intentions. It is clear that students do need to be able to have a wide range of factual material available to them without having to look it up, as well as needing to understand things. But the intention to memorise is often not the best way to achieve this goal.

**Activity 2.3  Your students’ approaches**

If a student on your course was taking a surface approach, how exactly might they go about the various learning activities that studying involves, such as taking notes in your lectures, reading, writing or preparing for examinations? How might they describe what they are doing?

What might you be doing as a teacher, or in your marking, which might inadvertently encourage your students to adopt a surface approach?

A student taking a surface approach might try to write down everything, or to write down only names, definitions, formulae or dates that it might be necessary to remember. In their reading, they might write out whole passages in their notes or look for and
note down only key facts. In their writing, they might cram their paragraphs with information presented indiscriminately, without forming an argument or providing a conclusion. Preparing for examinations might involve repeatedly re-reading their notes, perhaps trying to write them out verbatim from memory, but not doing any summarising or organising of information. They might describe this as ‘working really hard trying not to miss anything’ or ‘going over it making sure I’ve got it all in my head’.

You might be doing a range of things that could accidentally lead to such learning behaviour, such as:

- putting so much material in front of your students that they feel it is impossible to understand it all and instead settle for trying to memorise it;
- emphasising facts in your lectures by writing key words on the board;
- giving them so much ‘busywork’ to do that they don’t have time to stop and think;
- giving them so little choice that they have no interest in making sense of the material;
- using assessment methods and marking criteria which allow them to pass (if not to do very well) by simply regurgitating facts;
- putting ticks against correct information in their assignments while not commenting where they are trying to explain ideas;
- explaining or modelling what you expect them to do with the material you present;
- making students highly anxious, for example, by making the nature of examination questions a mystery, so that they drop down to a surface approach out of insecurity.

2.5 Do students study for different reasons?

Students seem to differ in terms of how motivated they are or how much they are interested in the course and their studying. Some students are described as simply ‘unmotivated’. But extensive interviews with students have revealed that it is not simply a matter of differences in the amount of motivation or interest, but in the nature of that motivation – what students are motivated towards, if you like. Work by Beatty and colleagues at the University of Surrey and the Open University has explored what she has termed ‘orientation’: what it is that students are oriented towards. Extract 2.4 below focuses on students’ different kinds of orientations. As you read it, think about your own students and their possible orientation.
EXTRACT 2.4
ORIENTATIONS TO LEARNING

Liz Beaty, Graham Gibbs and Alistair Morgan

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The orientations Beaty et al. (1997) describe are not mutually exclusive – a student may have a primary or dominant orientation and one or two secondary or less important orientations. For example, a student could have a vocational intrinsic and a personal intrinsic orientation at the same time. Also these orientations are not fixed – students change over time as they interact with their course. They may arrive at university with an idealistic academic intrinsic orientation, being interested in the subject itself, and gradually shift to a vocational extrinsic orientation as graduation and the potential of unemployment looms. Aspects of courses such as a lack of choice and opportunity to follow personal interests can affect such changes.

Influences operate in the other direction as well. Students' orientation affects their choice of courses and the way they respond to the assessment system. A student with a personal intrinsic orientation may choose courses out of interest even if they are difficult or inconvenient. The student may take risks with topics and the way study time is spent, in order to pursue their interest in the subject, as the challenge is more important than marks.

The extent to which a student is 'cue seeking' about assessment demands (Miller and Parlett, 1974) is likely to be related to their orientation. An extrinsic orientation, of whatever type, is likely to be associated with an attempt to meet assessment demands as easily as possible. An extrinsic orientation is also more likely to be accompanied by a surface approach (see Section 2.3), as there is no particular reason to try to understand the course content (unless this is the only way to do well enough).

2.6 Are there gender and cultural differences in how students learn?

It has often been suggested that women and men learn differently. It has also been suggested that students from different class backgrounds or different ethnic groups learn differently. However, when such suggestions are made they tend to be hotly disputed. We have not even attempted here to resolve this issue or draw general conclusions. Our aim in this section is to alert you to the possibility that there are important gender and cultural differences within your groups.

In this section, we have included two extracts. Extract 2.5 comes from a handbook for teaching assistants at Ohio State University, where issues of race and gender are prominent. It refers to research literature in raising issues of gender and cultural difference. This handbook informs our thinking about how students develop, adding gender-specific insights to models of development, researched at a time when a far higher proportion of students were male than is the case today. The handbook implies that women have distinctive 'ways of knowing' that emphasise 'emotion, insight and intuition' – a notion that is rejected by many people. It warns of the dangers of stereotyping about cultural differences and then identifies what some of these differences might be. In doing so, it highlights possible implications for teaching practices. In contrast, Extract 2.6 reports a quantitative study from the UK which found no evidence of any differences between male and female students in the approach they take to their studies. Richardson criticises the American literature on a number of methodological grounds. This is an area of impassioned debate and unresolved issues.
Activity 2.4 Join the debate

As you read Extract 2.5, underline all the ideas that seem to have relevance to your own student groups. Afterwards summarise about six important points and add notes next to each about what you think you might do about them in your teaching.
EXTRACT 2.5
WAYS OF DESCRIBING STUDENT DIFFERENCES AND THEIR IMPLICATIONS FOR TEACHING

Ohio State University

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Many concepts about how students learn are culturally bound in that while they appear to make sense and provide a helpful explanation within one culture and language, they sometimes appear not to fit within another culture. Most of the concepts in this book were developed in the context of white, largely male, English-speaking, Western higher education and it can be risky generalising to other cultures and languages. For example, there is evidence that Hong Kong Chinese students approach studying, and go about understanding study material, differently from Australian or UK students, and without taking a deep approach in the same way (Kember and Gow, 1990). It is less clear whether such differences survive when students move contexts – for example, if Hong Kong Chinese students were to study in the UK for several years. The statements made in Extract 2.5 about the learning styles and social preferences of various ethnic groups appear to assume that such differences are fixed.
The idea that male and female students in higher education differ in their approaches to studying is intrinsically a very plausible one. Despite the increase during recent years in women's participation in higher education, there has been very little change in the underlying distribution of power between men and women in institutions of higher education. In particular, it remains the case that female students are expected to study what are in most cases codified versions of men's experiences (Spender, 1981; Stanley and Wise, 1983). In the USA, there has developed in the last decade a very influential research tradition which maintains that female students exhibit conceptions of knowledge, truth and learning in their intellectual development that are qualitatively different from those of male students (e.g. Gilligan, 1982; Clinchy and Zimmerman, 1982; Belenky et al., 1986; Gilligan et al., 1988).

The later research has been criticised because it attempted to infer gender differences solely from the study of female participants (Crawford, 1989) and to that extent has been guilty of what Eichler (1988, Chapter 3) described as sexist research bias of overgeneralisation from one gender to another (see also Jacklin, 1981). There are also serious problems of sampling bias relating both to willingness or otherwise of students to participate in these studies and to the proper representation of students from different academic disciplines. [...]

In the study reported here, two different versions of the Approaches to Studying Inventory were administered to moderately large samples of undergraduate students taking courses in the human sciences ... There was no clear evidence of differences between male and female students either in their general orientations to studying or in particular aspects of study behaviour. This outcome is consistent with the broad pattern of findings obtained using other, similar instruments in order to examine the possibility of gender differences in student learning (see Richardson and King, 1991).

As in the case of claims that women study differently, claims that girl pupils are treated differently from boys in classrooms (Spender, 1982) have been disputed, and recent summaries of the literature paint a confusing picture:

The verdict on sex-inequalities in teacher-pupil interaction has to be 'not proven' despite Spender's claims.

Delamont, 1989, p. 272

These materials make a point of not delving into methodological issues. But behind apparently plausible, if controversial claims, such as that women students are different, or are treated differently, often lie methodological problems, disputes and conflicting findings. The point here is not to draw broad generalisations, but to heighten your awareness of issues that may affect your class.

**Activity 2.5  Noticing differences**

What differences have you noticed in your students' studying, pattern of involvement in class, or marks, which appear to be related to their gender or cultural background?

To what do you attribute these differences?

What implications are there for your teaching, faced with such differences, if your students are to have an equal opportunity to benefit from your course?

In one course I taught on the Psychology of Learning I frequently used collaborative learning tasks: breaking large groups up into small groups, setting short group research projects and so on. I noticed that the female students got together relatively quickly and seemed to work better together. The male students were often reluctant to join groups or slow to coalesce into a functioning team. My interpretation at the time was that the collaborative learning was quite challenging – if you didn't understand what was going on this was fairly obvious in small group work. And I suspected that the male students felt more threatened by the possibility of exposure of their incompetence. There were more female than male students and it might have been better to have mixed the male students across the groups more evenly, except that I would then have worried about the male students taking over.

These perceptions were based in my own, male, assumptions about gender differences and my gender-related explanations of student behaviour. To support equality of opportunity better, I probably ought to have paid a little more attention to developing team skills in mixed gender groups so that everyone was more aware of what was going on and more able to collaborate without hiding, dominating or being dominated.

**Summary**

This chapter has asked six key questions about how students differ as learners.
Do students differ in their intelligence?

Yes they do, and as access to higher education widens so they will differ to an increasing extent. But intelligence contributes less to academic success than one might expect and we have to look elsewhere if we are to understand why students study differently and perform differently.

Do students differ in their study skills?

Again, yes they do. But as we found when we analysed the ways two students read a chapter, there is a range of explanations for this apparent difference in skill. These explanations reveal more important underlying differences: in their intention or approach, in their understanding of the nature of knowledge, in their learning style and in their awareness and understanding of the demands of the learning task they were set. While it is possible to improve students’ study skills, unless these underlying issues are also addressed students may simply continue to do the wrong thing but with greater efficiency!

Do students prefer to learn in different ways?

Again, yes they do. However, the basis of these differences is not always straightforward. Sometimes it seems to be a habit associated with the kinds of task demands the student is used to facing, and sometimes it seems to be underpinned by a more fixed cognitive style. Two contrasting styles were identified in Schmeck’s review of the literature: ‘global’ and ‘analytical’, associated with attempting to gain an overview or attempting to work through material in a step-by-step manner. Kolb’s account of learning styles, discussed in Section 2.3, assumes that students can learn to change and balance their style, while Schmeck assumes that style is relatively fixed. Either way, there are clear implications for the teaching of students in your classes whose learning styles may vary and could be different from your own style.

Do students approach study tasks in different ways?

Students may take a deep or a surface approach to learning tasks, attempting either to make sense of or to memorise material. ‘Approach’ is an intention rather than a style and is not related to intelligence or skill. The approaches students take make an enormous difference to what they learn and what they remember, and a surface approach is disturbingly common. The approach most students take does not seem to be fixed but depends on their perceptions of their learning context, and especially on how they perceive the demands of assessment. A minority of students have such an unsophisticated understanding of what learning is about that they always take a surface approach, whether this is appropriate or not.

Do students study for different reasons?

Four different kinds of orientation to study have been described: vocational, academic, personal and social, the first three of which can take either an intrinsic or extrinsic form. Depending on what students are oriented towards, they will pay attention to, and put time into, different aspects of their studies. Students’ orientations may be multi-faceted and are likely to change over time, for example, in response to how they perceive the relevance of their courses to their chosen career.
Are there gender and cultural differences in how students learn?

The answers to this question are complex and controversial. Where differences are reported it is often unclear whether these are in part a consequence of teachers' expectations or of the way individuals are treated. Extract 2.5, from an American source, describes a range of gender and culturally based differences and emphasises the importance of teachers being sensitively aware of these differences while avoiding stereotyping. Extract 2.6, from a UK source, reports evidence from a study that found no difference between male and female students in their study behaviour, and criticises some of the American studies, which do report such differences.

The concepts and forms of analysis in this chapter may raise your awareness of the differences between your students and help you to diagnose the nature of these differences and identify the implications for your teaching.

References


Ohio State University Faculty (1995) Teaching at the Ohio State University – A Handbook 1995, Columbus, Ohio, Ohio State University.


Pack 2  Students Learning


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Text


Figures