Improving the Quality of Student Learning

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Publications

Section 1  How students learn and learn how to learn


Section 2  Developing university teachers


Section 3  The design of courses for improved student learning


Section 4 The design of student support systems


14. GIBBS, G., REGAN, P. & SIMPSON, O. (in press) Improving student retention through evidence based proactive systems at the Open University (UK) *Journal of College Student Retention*

Section 5 The design of assessment that supports learning


Section 6 Improving student learning through institutional learning and teaching strategies

Overview

My scholarship concerning improving student learning has been undertaken at each of six levels of organisation in higher education systems:

- Improving individual students as learners (Section 1)
- Improving individual teachers' ability to improve student learning (Section 2)
- Improving the design of assessment so that it supports learning better (Section 5)
- Improving the design of all aspects of courses so that the learning of all students on the courses improves (Section 3)
- Improving the student support systems that underpin all courses, so that student performance and retention is improved (Section 4)
- Improving institutional strategies to improve student learning (Section 6)

In operating at these different levels my work has progressed from focusing on the micro-level of an individual student undertaking a single learning activity in a specific context, to macro levels involving national and international comparisons of institutional strategies to improve student learning.

I started working on 'study skills' (Section 1) in the mid 1970's and have worked on institutional learning and teaching strategies in the last decade (Section 6). My work on Sections 2 – 5 spans three decades.

Research methodologies I have used include phenomenographic interviewing (Beaty, Morgan and Gibbs, 1997), depth interviewing (Gibbs and Durbridge, 1976a), psychometric development of inventories (Gibbs and Simpson, 2004a), use of existing inventories (Gibbs, 1982), use of evaluation questionnaires (Coffey and Gibbs, 2001), analysis of documents (Gibbs et al, 2000) and the use of management information systems to track student performance and progress (Gibbs and Lucas, 1997; Gibbs and Simpson, 2004b). Research designs include before and after testing of the impact of interventions (Gibbs, 1982; Gibbs and Coffey, 2004), longitudinal tracking of individual students (Beaty, Morgan and Gibbs, 1997), use of control groups (Gibbs and Coffey, 2004) and case-based studies (Gibbs, 2003a).

I have undertaken and published reviews of the literature associated with five of the sections: Section 1 (Gibbs et al 1982), Section 2 (Gibbs and Gilbert, 1998), Section 3 (Gibbs, 1982), Section 4 (Gibbs, 2003d) and Section 5 (Gibbs and Simpson, 2004).

Research in four of the six areas has been published in other countries: Section 1 in the USA (Gibbs, 1983) and Sweden (Gibbs, 1996a); Section 2 in Canada (Gibbs 1995d), Germany (Gibbs 1997a), Holland (Gibbs 1999a) and the USA (Gibbs and Angelo, 1998); Section 4 in Hong Kong (Gibbs and Simpson, 2004) and Section 6 in Portugal (Gibbs, 2003e), Spain (Gibbs, 2004b), and Australia (2005a).

Evidence of the scale of impact of this research is outlined in each section. A citation analysis for the 18 selected publications is included as Appendix 1.

A selection of 69 of my other publications are cited in support of the account in the sections below.
Section 1  How students learn and learn how to learn

Background

In 1975 I was employed as a Research Assistant in the Tuition and Counselling Research Group at the Open University. Open University students were at that time characteristically limited in their experience of formal education at a high level. In addition distance education placed study demands on them that were usually quite different from anything they had experienced before. Course materials and assignments were rather traditional in nature, concentrating on understanding of the course content with little emphasis on process or on helping students to learn how to learn. As a consequence it fell to the tutors, in their evening and weekend tutorials and in their feedback on regular assignments, to help students to adjust and learn how to study at a distance. Critical incident analysis studies of what made effective tutors (Gibbs and Durbridge, 1976a, 1976b) had identified study skills support and a sensitivity to learning difficulties as key issues.

I started to experiment with running study skills sessions and whole courses – offering my services to any institution and any subject area that wanted help. My colleague, Andrew Northedge, was also experimenting in his Open University tutorials. I started by reading 'How To Study' books, of which there were hundreds, and gave advice to students, or ran exercises that required them to practice implementing the advice. This did not work. Students usually found the advice irrelevant and did not follow it. Almost all the practical literature at that time assumed that studying was made up of techniques that could be learnt and used, by anyone, in much the same way, independently of disciplinary context or the purpose of particular study tasks, and that the use of such techniques would inevitably improve learning and performance. All of these assumptions appeared to be flawed. I started publishing articles critical of the dominant approach to study skills development (e.g. Gibbs, 1977).

Conceptualising learning to study

Andrew Northedge and I started reading literature on adult learning and reviews of the effectiveness of techniques such as speed reading courses and courses in creative thinking. We delved into the underlying psychological and empirical basis of popular techniques such as 'mind mapping' and mnemonic devices. We read literature on developing school pupil's writing, and humanistic literature (especially Kelley and Rogers) on autonomous learning. We read literature on group techniques such as 'Learning Thru Discussion' and on group dynamics, including Freudian and Rogerian approaches to groups. I learnt a wide range of group techniques, including facilitation of encounter groups, humanistic, Gestalt, experiential and synectics methods, co-counselling techniques and Interpersonal Process Recall techniques. Meanwhile I continued to experiment with practical approaches to study skills work with students, moving towards what would now be called 'student centred' methods and focussing on the purpose of study tasks and self-awareness instead of on technique and following rules. Andrew Northedge started conceptualising and articulating the ideas we were discussing that pre-dated the phenomenographic distinction between teacher-focussed and student-focussed conceptions of teaching by two decades (e.g. Northedge, 1975). He also wrote up the rationale and process of the group techniques he was developing that were to form the basis of our approach to study skills development (e.g. Northedge, 1976).
Publication 1 was an early attempt to capture what we had learnt from reading and experimentation, aimed at an audience of student counsellors who undertook 'study skills' work.

**Principled guidance to tutors**

Over time we developed materials and exercises for group study skills sessions that worked reliably well, and that tutors could run easily for themselves. I ran many staff development sessions demonstrating and disseminating these techniques. The scale of use of the methods in these booklets and their impact on students was monitored early on by sending questionnaires to the first one thousand teachers who requested (free) copies. Data from these questionnaires and from follow-up questionnaires on the impact of 396 sessions run by 61 tutors, is summarised in Gibbs (1984, p282-285). It was estimated that, by 1983, about a quarter of a million students had experienced the sessions in these booklets.

Publication 2 is a book-length version of the booklets described above. It was reprinted six times and stayed in print for 19 years and is one of the most frequently cited of my publications. The approach adopted in Publication 2 was subsequently communicated to various audiences, including the American academic community (Gibbs, 1993); educational psychologists (Gibbs, 1985) and the Swedish academic community (Gibbs, 1986).

**Phenomenological approaches to understanding student learning**

During the late 1970's Ferenc Marton and his colleagues from the University of Goteborg started to publish in journals in English and to attend conference in the UK. I was greatly influenced by this work as it helped to explain and integrate insights we had acquired in our study skills development work, and offered the possibility of a more comprehensive and integrated way of understanding student learning. In particular the concept of 'approach' to learning was concerned with intention rather than with skill, and this fitted very well with the way I had been working to develop students' as learners. I established a research group within the Institute for Educational Technology (the 'Study Methods Group') to undertake what is now termed phenomenographic research in the context of distance education students' experience of learning. I won a Social Science Research Council Fellowship to spend a period at Goteborg and on my return wrote a review of their work in order to bring it together and to communicate it to a wider audience, since the sources included PhD theses and unpublished internal reports from Goteborg that were unknown in the UK. This review was published in as Publication 3. It predated 'The Experience of Learning' (Marton et al, 1997), as an introduction to phenomenographic studies of student learning, by some years.

Publication 4 demonstrated, through phenomenographic analysis of depth interviews, that distance learning mature students displayed the same kinds of variation in approach to learning as did the younger conventional students in studies at Goteborg University, and later at Lancaster University. This publication also reveals the way that phenomenographic research methodology was at that time being located in relation to already established qualitative research methodologies and theoretical approaches, such as 'grounded theory'. At that time ethnographic research was dominant at the Open University and a phenomenographic approach required justification to an extent that is not so common today.

Publication 5 represents the most distinctive and useful outcome of all the phenomenographic studies we undertook. It built on Liz Beaty's doctoral research on
students’ orientation to study and was concerned not with ‘motivation’ as a quantity but as a vector – in other words it examined what students were oriented towards. It did this alongside examination of students’ approach to study, their conception of learning and their understanding of subject matter (e.g. Gibbs et al 1982; Taylor et al, 1982) and, for the first time, showed the complex but coherent relationships between these different aspects of students’ experience, from a phenomenographic perspective. For me the most illuminating part of this publication is the two case studies (pp178-186) which show how different components of students experience of learning are related to each other in a dynamic and evolving way.

In addition it again showed that concepts derived from conventional higher education contexts were also relevant to a distance learning context. Here, however, mature part time students showed a different distribution of categories of experience, with more personal and intrinsic orientations than did eighteen year olds, and less extrinsic orientations. They were more likely to want to study to improve themselves and because they loved the subject, rather than simply to progress up an educational ladder or to qualify for a profession, and this had profound implications for their approach to learning and their learning outcomes.

Subsequent publications based on follow-up interviews with the same students over four years showed how students’ growing understanding of learning, and also the influence of institutionalised learning, framed their changing approaches to studying and what they got out of their learning (e.g. Beaty et al, 1997). This remains one of the few detailed longitudinal studies of student learning in higher education that helps to unpack its complexity.

More recently I have summarised my understanding of how students learn, how students differ as learners and how student develop as learners, in three Open University Course Units for a Postgraduate Certificate in Teaching in Higher Education (Gibbs, 1998a, 1998b, Gibbs et al 1998) that introduced higher education teachers to theory and evidence about teaching. I drafted a shortened version of Gibbs (1998b) recently as an appendix to a paper to the Educational Policy and Standards Committee at the University of Oxford to inform debate about provision of study skills support to students. This has led to the establishment of a Student Learning Advisor post, not to train students in study skills but to train tutors to support the development of students and to advise colleges on their learning support provision.

Section 2 Developing university teachers

Background

An obvious way to attempt to improve the quality of student learning is to improve the quality of their teachers. I started designing and running training workshops for teachers in 1976. I have designed and run full programmes for university teachers from 1980, when I established the Educational Methods Unit at Oxford Polytechnic, for 25 years until the present time when I teach on a Postgraduate Diploma in Learning and Teaching in Higher Education at the University of Oxford. The design of these programmes has been extraordinarily varied and unstable, in terms of their process, their content and their rationales. Processes included experiential methods using co-counselling and cycles of action and reflection, a focus on observation using Interpersonal Process Recall, resource based learning, distance learning, learning-outcome driven development employing detailed portfolios of evidence, action learning and project based learning. Evaluation of the programmes had been mainly
- A lack of contextual validity.
- A lack of use of measures linked to the purpose of programmes, such as using an established questionnaire to measure intended changes in reflection or self-efficacy;
- Very short term measures, such as at the end of a workshop, rather than longer term follow-ups in the context of everyday teaching;
- A lack of before and after measures so as to be able to measure change;
- A lack of suitable control groups. Teachers who voluntarily participate in training are different from those who do not, in many ways, and it is therefore not methodologically sound to compare trained with untrained teachers in many contexts where all those who are trained are volunteers.

Gibbs and Gilbert (1998) went further in that it identified the theoretical models underlying different approaches to training teachers and, where they were available, questionnaires or other research tools that could be used to measured different outcomes related to the different the theoretical underpinnings. These are summarised in Table 1, derived from Publication 7.

Table 1 Rationales of training, their focus and associated features of training, and possible measures of impact (derived from Publication 7, Table 12.3 p138)

<table>
<thead>
<tr>
<th>Rationales</th>
<th>Focus</th>
<th>Associated features of training</th>
<th>Measure of change</th>
</tr>
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<tbody>
<tr>
<td>Behavioural change</td>
<td>Classroom teaching behaviour and the improvement of skills.</td>
<td>Advice on teaching behaviours</td>
<td>Observation schedule</td>
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<td></td>
<td></td>
<td>Video-feedback on teaching</td>
<td>Student feedback questionnaire</td>
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<td></td>
<td></td>
<td>Micro-teaching</td>
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<td></td>
<td></td>
<td>Collection of student feedback.</td>
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</tr>
<tr>
<td>Personal Devel'ment and change</td>
<td>Personal development Movement from a preoccupation with self and content to a focus on methods and learning.</td>
<td>Provision of a supportive peer group, individual consultation, mentoring, acculturation, social and intellectual integration.</td>
<td>Structured interview</td>
</tr>
<tr>
<td></td>
<td>Conceptual development Increased sophistication of what teaching and learning involve</td>
<td>Articulating and 'unfreezing' existing concepts, discussing assumptions and beliefs, providing alternative conceptual frameworks, embedding new concepts.</td>
<td>Approaches to Teaching Inventory</td>
</tr>
<tr>
<td></td>
<td>Self-efficacy Increased confidence in one's ability to teach effectively and to use new methods.</td>
<td>Humanistic concerns for low external threat, high (peer) support and positive feedback.</td>
<td>Self-efficacy inventory</td>
</tr>
</tbody>
</table>
qualitative, using informal interviews and open-ended questionnaires involving the participants, and one year follow-ups involving participants reporting back on the achievement of personal development action plans. I had published about some of the practices I used (e.g. Gibbs, 1981, 1986b, 1995c), discussed approaches at conferences (e.g. Gibbs, 1998c) and written guides for new higher education teachers (e.g. Gibbs and Habeshaw, 1989). However little of this work was underpinned by a coherent conceptual framework and in 1997, when I returned to the Open University to develop distance learning programmes to meet the new professional standards developed by the Institute for Learning and Teaching in Higher Education, I still had no convincing evidence that programmes benefited teachers or their students, and had little empirical basis for selecting one approach to programme design over another.

Comparative perspectives

Through consultancies, visits and conferences in other countries it became clear that the dominant models of teacher development programmes in the UK differed from those elsewhere, and particularly in the USA, in their implicit rationales and processes and in many of their practical features. Some of these differences were concerned with organisational and employment differences and some were based in different theoretical traditions. For example ‘teacher development’ in higher education in the USA usually finishes before teachers are appointed to tenure-track positions and consists largely of programmes for vast numbers of graduate teaching assistants. These programmes are short (because the numbers are so large) and tend to focus on those aspects of classroom practice that are under the control of GTAs and not on the course design and assessment design issues that the professors for whom they work would need to address, and that most UK programmes emphasise. US programmes tend to be behaviourally oriented and underpinned by empirical evidence drawn from cognitive and behavioural psychology experimental studies rather than by theory developed in the context of complex conceptual learning in naturalistic higher education contexts.

If there were to be meaningful studies of the impact of initial training then these differences in focus, purpose and rational needed to be taken into account. After discussing these observations in various contexts I was encouraged to write them up and present them for discussion at international gatherings, as there is very little comparative literature about teaching and learning in higher education (Gibbs 1996a, 1997a, Gibbs and Angelo, 1998). Publication 6 is one of the outcomes of this comparative work.

Literature review

A literature review was undertaken to identify available sources of evidence concerning whether training of university teachers, of whatever form, had a measurable impact. Gilbert and Gibbs (1998) summarised the available literature, including conclusions from previous reviews that had been undertaken one and two decades previously. Thirty seven studies were identified but none reported evidence of impact on student ratings of teachers let alone on student learning, in a convincing way. Problems with existing studies included:

- A common lack of any measure beyond satisfaction or self-reported impact;
- Evidence about particular training techniques used as part of training (for example the impact of student feedback ratings plus consultation on subsequent feedback ratings, or the use of microteaching) but not about the impact of whole programmes;
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<tr>
<td>Improving Student learning</td>
<td>How students approach learning. Focus on learning outcome rather than teacher input.</td>
<td>Familiarisation with student learning theory, attention to student learning activity and to assessment of learning outcomes, rather than to teaching.</td>
<td>Approaches to Studying Inventory</td>
</tr>
</tbody>
</table>

**Publication 8** reported a study to explore the varying goals of different training programmes, prior to selecting measures for a study of impact of programmes. Table 1 above was based in part on interpretations of programme goals as described in published accounts, and in part on goals specified in documentation of courses, where this was readily available. However there appeared in many cases to be a weak relationship between the formally stated goals of courses and the training processes used, and we wanted to find out what trainers themselves believed they were trying to achieve. This was done through depth interviews with trainers from a wide variety of programmes for new lecturers at institutions in the UK. The most revealing interview questions used a critical incident technique and asked trainers to think of an occasion when they were delighted with the outcomes of their programme and an occasion when they were dismayed. This successfully revealed the values and personal hopes of trainers, sometimes rather different than the learning outcomes specified in formal programme documentation, and almost always different from the outcomes specified by the Institute for Learning and Teaching who had accredited every programme studied.

**Measuring the impact of programmes**

To measure behavioural change, as perceived by students, we selected the 'Student Evaluation of Educational Quality' Questionnaire. Its scales are highly internally consistent and student ratings are consistent over time. This consistency was important as we were going to be taking before and after measures and did not want random variation in ratings to swamp any possible changes over time. A version of the SEEQ was developed and piloted, containing all items from the six scales that referred to teachers' classroom and other behaviour and omitting items from those scales that referred to aspects of courses. This was the first validation of the SEEQ in the UK and was published as Coffey and Gibbs (2001). Items from the 'Good Teaching' scale of the Module Experience Questionnaire (MEQ: a module-specific version of the CEQ) were added to the SEEQ in order to cover wider aspects of teaching than those addressed in the SEEQ.

An attempt was made to devise a measure of teachers' repertoire, but this was not successful. There are many problems associated with defining 'a method' or a 'different method' in a way that all teachers understand in the same way. The failed attempt was published as Coffey and Gibbs (2002).

The Approaches to Teaching Inventory (ATI) was used to measure changes in teachers' conceptions of teaching, and surface approach and deep approach scale
items from the MEQ were used to measure changes in the way students study as a consequence of changes in teaching.

A study was devised that involved 22 programmes in universities in eight countries: ten in the UK, ten outside the UK and two universities with no initial training programme as a control group. The measures were taken right at the start of teachers' participation in their programme and one year later – where possible involving student data from teaching on the same course (but with different students, of course). Publication 9 (Gibbs and Coffey, 2004) was published as a succinct overview of some of the main the findings of the study.

These findings received widespread attention in the Guardian and the Times Higher in the UK and also internationally (e.g. Gibbs, 1999a; Gibbs and Coffey, 2002). A series of national one-day workshops was commissioned by the Institute for Learning and Teaching in Higher Education for those running training programmes, to inform them about the findings and to provide guidance about evaluation techniques.

A 'Training Evaluation Toolkit' (TET) was developed that combined the separate questionnaires into two succinct inventories. One was for teachers, and included new scales on self-efficacy and reflection, based in existing published inventories, in addition to the ATI scales on teaching focussed and student focussed conceptions of teaching. The other was for students, and combined the SEEQ items into a single teaching scale and included deep and surface approach scales. It was piloted with a substantial sample of both teachers and their students but the funding for the work ended before the factor analyses and other statistical analyses were completed, and this work has not been published.

Section 3 The design of courses for improved student learning

Background

The annual International Improving Student Learning Symposia grew out of a single national scale project. In the late 1980's in the UK the national quality body for Polytechnics, the Council for National Academic Awards (CNA), became aware that course documentation they were reviewing contained either no rationale for the choice of teaching and assessment methods or rationales which were not underpinned by any knowledge of theory or evidence about how students' learn or awareness of what features of course design affect how students learn. They had tired of reading ill-informed and unjustified explanations about why course designs were as they were. They invited tenders for a research project designed to demonstrate that if you took the student learning research seriously when designing courses, it made a difference to student learning. I secured the contract with a bid based around what was known at that time about students' approach to study and what influenced students' approach. At that time we already knew a good deal about student learning from a phenomenographic perspective that could help us in this project:

- students vary not just in the quantity or skill of their studying but in their approach to learning, and particularly in the extent to which they are attempting to reproduce or understand study material;
- the extent to which students take a surface or deep approach is readily identifiable with quite short questionnaires;
individuals vary in their approach between courses, within courses and even within single study tasks, so contexts clearly influence students' approach;

students vary in their conception of learning and their conception constrains their approach such that students with unsophisticated conceptions of learning are likely to take a surface approach regardless of task demands, while students with more sophisticated conceptions of learning can take a surface or a deep approach, according to context.

what students learn varies not just quantitatively, but qualitatively, and it is possible to characterise outcomes in a limited number of qualitatively different ways, either with reference to different levels of understanding of the specific concepts involved or with reference to a general purpose taxonomy of the structure of learning outcomes;

the way students approach their learning (deep or surface) is closely related to the quality of their learning outcomes. A surface approach is likely to lead to short term recall but little understanding or longer term recall, list-like structures, no conclusions etc.

the extent to which students take a deep or surface approach is closely related to a number of features of the learning context;

these contextual features are readily identifiable using questionnaires;

the features associated with students taking a surface approach are implicit in a number of pedagogic approaches, such as Problem Based Learning.

However at that time there was almost no evidence that it was possible to intervene in a course with a clear rationale for changes to features of the course and its pedagogy, so as to induce a deep approach to a greater extent so as to produce better quality learning outcomes.

The Improving the Quality of Student Learning project

The project advertised for teachers who felt that they had severe quality problems on their courses and who wanted to do something about it and to join the project – in particular, teachers' whose students took a surface approach to their studies and who wanted to change their course so as to encourage them to take a deep approach. Over one hundred teachers applied to be involved and eight were selected, to represent a wide range of disciplines and institutional contexts and a wide range of existing problems. These eight teachers then engaged in a two-year process involving:

- diagnosing what was going wrong with their current course by using existing theory and by collecting evidence from students and other sources using existing research tools;
- selecting tactics to address the problems that could be justified from the literature;
- implementing the new tactics;
- evaluating the impact on students' approach and on learning outcomes.

At that time we already had research tools to help with diagnosing problems or evaluating the impact of interventions, such as:

- inventories from Australia and the UK that measured the extent to which students took a surface or deep approach;
- phenomenographic category systems to help categorise, for example, students' approaches to learning, students' conceptions of learning and students' conceptions of a number of concepts, mainly in science and economics;
- the SOLO taxonomy for categorising the structure of learning outcomes.
• descriptions of how to conduct this kind of research.

The eight action research projects produced a wide range of evidence of:

• the extent to which there were problems with the quality of students' approach and the quality of learning outcomes, before the interventions;
• improvements in students' approach (i.e. towards a deep approach and away from a surface approach);
• changes in a positive direction in students' descriptions of how they went about studying, for example with greater engagement and meta-cognitive awareness and control;
• quantitative and qualitative improvements in students' performance on assignments and examinations, including improvements in the structure of learning outcomes as measured by the SOLO taxonomy;
• changed perceptions of employers of the characteristics of students emerging from courses;
• changes to other courses as a consequence of successful changes to the courses being studied.

The first outcome of the project was a book (Gibbs, 1992b). Data included changes to individual students and the emphasis was on presenting understandable and convincing pictures within a consistent explanatory framework. The book in addition provided a theoretical and methodological introduction, and staff development resources for using the book to support similar studies. This is the most cited of my publications.

The second outcome was a conference at which the eight teachers presented how they had improved student learning on their courses. There was such a level of interest in this project that we were encouraged to mount a similar conference the following year at which others could present their action research of a similar kind. The number of presenters and participants grew to such an extent that we had to move to a much larger venue and the Improving Student Learning Symposium was born. I edited the proceedings of the first four Symposia (Gibbs, 1994, 1995a, 1996b, Rust and Gibbs, 1997). In 2000 I was invited to give the keynote at the 10th Symposium, in Brussles, and undertook a review of the papers that had been presented in the previous decade. By then over 2,000 participants had attended over 450 sessions involving papers, seminar, workshop and 'works in progress' and 374 papers had been published in annual proceedings. Gibbs (2003) provides a succinct summary of what had developed theoretically and empirically over the decade, and a critique of blind spots and weaknesses in the research. The 2005 Improving Student Learning Symposium was the 13th international event.

Publication 10 provides a summary of the student learning literature as a basis for using course design to improving student learning, and focuses on the 'Improving the Quality of Student Learning' project, as well as other studies concerned with course design for large classes.

Publication 11 focuses on the action research aspect of the 'Improving the Quality of Student Learning' project.

Publication 12 discusses different approaches to the application of student learning theory to the design of courses and improvement of student learning, summarises the underlying rationale of the Improving Student Learning Symposia and gives
examples of studies of a variety of types from the first Improving Student Learning Symposium in 1993.

Section 4 The design of student support systems

Background

In 2001 I set up the Student Support Research Group at the Open University, consisting of three staff, and in January 2002 I was asked to plan an evaluation of existing efforts to improve student retention. During 2001 the university had provided £500,000 for a practical initiative to improve student retention. The funding had been allocated to the university's thirteen Regions to provide additional support to 'vulnerable' students. Regions had varied existing support practices as baseline provision and added to this a wide variety of additional support, for different groups of students, in different courses, involving various kinds of responsive and proactive interventions, such as:

- face-to-face study skills workshops and careers guidance workshops;
- funding to allow individual tutors to provide 'special sessions' (for individual students) in response to perceived need;
- 'call-centre' type phone calls to students to check up on their progress;
- offers of additional support to students who failed their examinations.

While a good deal was learnt about the logistics and operation of particular practices evaluation failed to identify the impact of any individual intervention or any combination of interventions. University-wide retention rates did not improve or meet learning and teaching strategy targets. Regionally, retention rates a varied, some going up and some going down, in a way that seemed unrelated to provision, and not a single individual intervention was demonstrated to make any difference. A thorough review of all the available evaluation reports showed that this failure was due to a wide range of methodological flaws, both in making appropriate interventions (given the available evidence about student retention) and in the methodology of the evaluations.

- Interventions were not targeted at the right time. Evidence about when students withdrew (Simpson, 2003) showed clearly that most drop-out was very early in courses, often before students had really engaged and usually before the first assignment. Most interventions occurred too late in the course to affect many students at risk of dropping out.
- Interventions were not targeted on the right students. While courses with higher than average drop-out and new students unfamiliar to distance education were targeted, available data on who drops out (Ashby, 2004) was not used strategically.
- Many of the interventions were provided for students who already had the highest likelihood of course completion. This was not a deliberate policy but was an inevitable consequence of most interventions requiring students to self-select and 'opt in' to take up offers of support.
- The scale of interventions was too small. Simpson (ibid) has argued that there is a theoretical maximum to retention rates in distance learning contexts. Although I have argued (Gibbs, 2004a) that limits are unlikely to be as constrained as Simpson has claimed, there is nevertheless relatively little scope for improvement and small scale interventions may be unlikely to outweigh the impact of the much larger scale of all other provision (such as course materials, assignments, tutorials and so on).
• There were no control groups or even reasonable comparator groups.
• There was inadequate record-keeping. Regions rarely knew exactly which tutors, or regional staff, contacted which students, when, or what the outcome of individual contacts might have been.
• There was too much emphasis on qualitative data, especially concerning students' 'satisfaction' with interventions or their subjective experience of 'helpfulness'. From a fee income point of view all that mattered was whether students completed courses or not.
• There was too much emphasis on questionnaire rating scales to collect evidence. Open University students are well known for their gratitude for almost any form of provision or contact and there are regularly 'ceiling effects' in rating scales, with almost all students rating almost everything very highly (even despite its known ineffectiveness).
• The thirteen separate and entirely different forms of evaluation report from the regions each ran to many tens of pages, with appendices sometimes running to hundreds of pages, and were not read.

Programmatic action research into student retention

As a result of the failure of the £500,000 investment in 2001 to either deliver improved retention or to answer any questions about how to improve retention, the university decided to repeat the exercise with another £500,000 in 2002. It was in this context that I was asked, in January 2002, after most of the 2002 interventions had been planned and with courses due to start in a matter of weeks, to devise an evaluation plan to rectify the problems of the previous year.

My design of the evaluation framework owed much to a process used in evidence based medicine. Experimental and control groups are established by local providers of services (usually GPs) and small amounts of data are collected in identical ways, by very large numbers of medics all round the world, each with small numbers of patients, and collated centrally, electronically. Such an approach is capable of answering clinical questions at very low cost. I termed my educational version of evidence based medicine 'programmatic action research' to distinguish it from the kind of action research that regions claimed that they were already undertaking. The framework involved the forming research teams of those regions that shared the same type of intervention (for example funding additional early tutor contact with students to check on progress and offer encouragement). Six such teams could be identified. The task of each team was to agree to make their interventions as similar as possible to each other, agree a common targeting of the intervention so that the same categories of students received the same intervention in each region and agree a common form of record keeping in a way that would enable the impact of interventions with individuals to be tracked and collated using existing management information systems.

All the teams that were able to achieve this agreement were allocated additional funding to support the evaluation and promised intensive support from my research group. Teams that were not able to agree a common approach were dropped from the study. For each team we then identified other Regions that could provide a control group containing a similar number of the same categories of students on the same courses who would not experience the particular intervention. The sample sizes for the intervention and control groups were typically over 1,000, for each research team.
Questionnaires were designed to tap students' experience of the interventions, and administered to both intervention and control groups. The questionnaires were distributed regionally, timed to follow interventions, but designed and collated centrally and coded by my Research Fellow, Claire Simpson. The questions were drafted so as to check on research teams' hunches about the nature of any impact the interventions might have had (for example on students' motivation, on their study skills or on their understanding of assignment requirements). Automated questionnaire reading equipment and software was purchased and programmed. Machine-readable questionnaires were designed and printed with individual student identifiers and completed questionnaires were scanned by the equipment and data saved as SPSS files for analysis. We recruited a regional member of staff with particular expertise in using the university's student information system (CIRCE) to track the progress of all students in the intervention and control groups in terms of submission of the first assignment, assignment grades, sitting the exam, and exam and overall course marks. CIRCE management information data on student progress was then interfaced with the SPSS files to allow statistical analysis of the joint data sets.

Reports on the outcomes of individual research teams were produced in a two-page format (with appendices) for the Pro Vice Chancellor and Director of Student Services, as soon as data was available - for example three months into the study for data about the impact of early proactive interventions on assignment submission rates for the first assignment.

A range of statistically significant positive impacts in the range 2%-5% improvements in assignment submission and retention were identified. The political response was immediate - this was the first ever data in the University that showed convincingly that retention rates could be impacted, and these findings could be interpreted in two minutes.

A paper (Gibbs and Simpson, 2004b) was presented at the main international Distance Education conference and contained some of the findings from the 'programmatic action research' from two of the research teams. Publication 14 goes further in pulling data and conclusions together in a form US academics could understand. Publication 14 also describes some of what followed, in the form of structured student support systems that operated in 2003 designed entirely on the basis of evaluation evidence collected in 2002 and made up of a series of targeted proactive interventions timed at crucial points in the study year, driven by improved information systems implemented by 'call centre' staff. This system was piloted in three forms (to compare delivery and staffing systems), in the only three funded regions in 2003. Such a system is to be implemented across the entire university in future, driven by a new management information system resembling 'customer relations management' software.

Cost effectiveness of interventions

I undertook a cost-effectiveness analysis that involved estimating the increased fee income from retained students, the reduced recruitment costs (to replace students who dropped out) and increased fee income and reduced recruitment costs if these students continued in the future, based on the available data extrapolated to larger populations. The assumptions and calculations were checked and modified by the university accountants before presentation to senior management in the form of an 'expected return on investment'. These returns were in the range 150%-300% depending on the assumptions made, and compared favourably with simpler analyses undertaken in the USA concerning retention efforts in conventional higher
education institutions. They turned out to make compelling reading to senior management and changed Open University student support policy and practice and even attitudes to the autonomy of the regional structure of the university.

Reconceptualising student retention in distance learning contexts

In discussing evidence with both regional staff and central policy forming staff, as data emerged, it became clear that personal and implicit theories of student retention were incapable of explaining the various kinds of impact (and lack of impact) that emerged from the data. I encountered beliefs in notions of 'academic and social integration', based on the retention model of Tinto (1993) which was developed to explain retention patterns of full time eighteen year olds in conventional higher education contexts. These beliefs seemed at odds with what part time mature distance learning students were telling us about their reasons for dropping out. The inappropriateness of the dominant beliefs had led to interventions that were ineffective. The available literature on retention in open and distance learning and it seemed ill-equipped to account for the patterns that were emerging. I decided to mount a symposium on retention in open and distance learning, sponsored by the journal Open Learning and to edit a special issue of the journal based on papers that emerged from the symposium. Key Open University policy formers were invited (for example from French and Irish distance learning institutions) and a small international audience was selected from a much longer list of applicants. Papers were specially commissioned from those who had researched retention in conventional contexts as well as from those who focussed on distance learning:

- Mantz Yorke, concerning his national study of drop-out in conventional higher education (Yorke, 2004);
- Veronica McGivney, concerning her work on adult persistence in education (McGivney, 2004);
- Betsy Barefoot (and John Gardiner) from the American research centre that collates data from 'First year Experience' interventions (Barefoot, 2004);
- Alan Woodley, who had undertaken psychometric analysis of retention questionnaires to explore the relevance of their underlying theory, based on Tinto, to distance learning (Woodley, 2004);
- Alison Ashby, on extensive Open University data concerning who drops out, under what circumstances (Ashby, 2004);
- Ormond Simpson, author of 'Student retention in online, open and distance learning' (Simpson, 2003) on the rationale for interventions designed to improve retention (Simpson, 2004).

After the symposium I edited Open Learning Issue 19.1 (2004) containing versions of the above six papers, revised in the light of the debates, and wrote an extended editorial introducing these papers. I also presented a conference paper pulling together collective insights from the Symposium (Gibbs, 2003d). Publication 13 is a further development of this overview of insights.

Section 5 The design of assessment that supports learning

Background

My work leading up to the research reported in Publications 15, 16 and 17 took three forms. First, a series of large scale quantitative studies based on analysis of archives of administrative data bases I had undertaken on student performance in large classes (e.g. Gibbs et al 1996) included analysis of the impact of the proportion
of coursework marks on student performance (Gibbs and Lucas, 1997). It was clear that if a significant proportion of marks was allocated to coursework then the negative effects of class size could be ameliorated to some extent.

Second, I had for many years been collecting and publishing examples of assessment methods. Some were based on methods that colleagues, and those I consulted with, reported to work well to support student learning, and others were based on ‘case study’ accounts of practice in the literature (Gibbs et al, 1986; Gibbs, 1992a; Gibbs, 1995b).

Third, I had undertaken a considerable volume of educational development consultancy and training concerning assessment, in a very wide range of disciplines, institutions and national contexts, and had acquired a weakly theorised sense of what worked and why. My first attempt to theorise this experience was written up as Publication 15.

I had applied for £930k from the ESRC Teaching and Learning Research Programme in an attempt to extend my informal understanding of the way that assessment supported student learning, through formal empirical studies. However while the bid had been short-listed, it had not been funded. Then an opportunity arose to run a research-driven educational development project funded by the HEFCE Fund for the Development of Teaching and Learning programme. I bid, on behalf of the Science Faculty at the Open university, for an FDTL project on formative assessment in Science, and was awarded £250k.

Conceptual development

The starting point for the research in this section was a literature review on the way that assessment affects student learning: Publication 16. This included a wide trawl of discipline-specific journals on teaching that contained case-study like accounts of innovations in assessment where there was evidence that learning had improved but usually not a theoretical account of why. The aim was to integrate theoretical literature, often based on the study of assessment in schools, empirical and conceptual literature concerned with assessment in higher education, and insights from empirical studies of innovations that involved assessment. The focus was not assessment as measurement, or assessment as defining learning outcomes and curricula, but assessment as a vehicle through which worthwhile learning is supported. The intention was not to list groups of studies and simply collate their findings, but to attempt a conceptual integration in the form of ‘conditions under which assessment supports learning’. The conditions outlined in Publication 16 drew on the earlier and simpler framework in Publication 15. The conditions also drew on a range of theoretical frameworks and methodological approaches, including ethnographic studies of students experience, phenomenographic studies of students’ approaches to learning, cognitive accounts of the role of feedback in learning and behavioural and empirical accounts of what students do. Some of the studies cited contain no theory and the only data is of student grades in quasi-experimental studies involving comparison of groups treated differently. In these cases I was looking for evidence that when conditions appeared to have been met, from the descriptions of treatments provided, student performance was better. Some of these conditions also drew on existing sets of principles such as the ‘Seven principles of good practice in undergraduate education’ (Chickering and Gamson, 1991) but take from these principles those components that directly concern the impact of assessment on learning.
It quickly became apparent that these 'conditions' formed a very powerful checklist for teachers to review the extent to which assessment supported their students' learning on a specific course. Recognition of this power came in the form of invitations to give keynote presentations at institutional teaching conferences in the UK (Sussex, Surrey, Bristol, Bath, Newcastle, Liverpool) and also at events in Hong Kong, Australia, Denmark and Australia. The set of eleven conditions has been adopted as the conceptual framework for the FAST project (Formative Assessment in Science Teaching http://www.open.ac.uk/science/fdtl/).

A conference paper (Gibbs, 2002a) presents this conceptual framework as the basis for research into the effects of assessment on student learning.

A recent chapter (Gibbs, 2005) links these conditions to assessment tactics so that teachers who diagnose that one or more of the conditions is not being met well on their course can select an appropriate assessment tactic in an attempt to improve matters. For example if students are found not to be spending sufficient time on task, additional assignments can be set. To make this practicable within limited resources the assignments can be made a formal requirement but not summatively marked, or assignments can be randomly sampled for summative assessment with a sample of perhaps 25% of each students' work. The intention in this chapter was to provide a coherent rationale for selecting a particular assessment tactic – something that is largely lacking with Gibbs et al (1986) and in most practical books on assessment where methods are listed by type and described in terms of what they consist of, rather than being listed by the nature of the educational problem they are designed to solve and described in terms of the kind of 'pedagogic work' that they do.

**Development of the Assessment Experience Questionnaire**

I had worked with many higher education teachers using a checklist of the eleven conditions and asking them simply to think about which of these conditions their existing assessment regime met well or less well. Typically they were highly optimistic – for example judging that their students read feedback on essays carefully and used it to go back to re-study topics that had not been addressed well in the essay. My own experience in study skills work led me to believe that this was extremely rare student learning behaviour and that they were more likely to glance at the mark and throw the essay in a pile, possibly for reference during revision, but probably not. I decided to attempt to develop a simple and easy to use student questionnaire order to be able to provide teachers with a more realistic impression of how their students behaved in relation to their assessment regime so that they could make a more accurate diagnosis concerning the extent to which the conditions were met and so select more appropriate alternative assessment methods.

From published studies, especially qualitative ones, there were plenty of examples of the kinds of things that students say about their experience of assessment. At the Open University I also had data from a group of science lecturers I had trained to undertake interviews with students studying science courses while they were at summer schools, in the summer of 2001. I and Claire Simpson set about turning these student quotes into statements that related to the eleven conditions that students could indicate on a rating scale the extent to which they agreed with these statements for a specific course they were asked to think about. It was intended that questions be clustered in groups with the intention of forming scales relating to the conditions and that we would need to undertake a factor analysis of data from a reasonably large sample so as to establish the internal coherence and distinctiveness of these scales. It was decided that eleven scales was likely to be too many and so related conditions were pulled together into five scales concerning:
- Amount and distribution of study effort (conditions 1 and 2)
- Assignments and effort (conditions 3 and 4)
- Quantity and timing of feedback (conditions 5 and 6)
- Quality of feedback (conditions 7, 8 and 9)
- Use of feedback (conditions 10 and 11)

Practical considerations meant that questions about the impact of an examination or coursework would have to be separate as some courses had one but not the other and some had both, and so separate questions were devised concerning the impact of the examination, to form a sixth scale.

A factor analysis from the use of this version of the Assessment Experience Questionnaire with a large sample of students on science courses is reported in Publication 17.

Several problems emerged. First, it is difficult to distinguish between students' general response to curricula (for example the extent to which they are hard working or not, or the extent to which they are highly strategic) and their response to a specific curriculum (for example whether the assessment only demands attention to a narrow range of topics or only gives students the time to do some of the work). In an interview it is possible to ask follow-up questions such as "do you always study like that" and this would elicit information about whether what was described was a uniform response to all courses which is largely a characteristic of the student or a unique response to a characteristic of the course being studied. In a questionnaire of this form this is difficult to distinguish.

Second, the decision to combine conditions in pairs within scales turned out to be practicable for the two scales concerning feedback. Students respond to all questions about the feedback itself in much the same way and to all questions about use of the feedback in much the same way. However it was not workable for scales 1 and 2 in which students responded differently to questions about either quantity or distribution of effort (scale 1) and about either engagement or clarity of expectations (scale 2).

Subsequent studies

A revised version of the AEQ has been developed that addresses several of the above issues and in addition exploits already developed items and scales from established questionnaires that relate closely to the 11 conditions:

- Includes items on distribution of effort (which is related to assessment demands) but not quantity of effort (which is more a characteristic of the student)
- Adds deep approach and surface approach items which already form robust scales on the Approaches to Study Inventory (ASI)
- Adds 'appropriate assessment' items which already form a robust scale on the Course Experience Questionnaire (CEQ)
- Adds 'clear gals and standards' items which already form a robust scale on the CEQ
- Adds an 'overall satisfaction' item from the CEQ which can be used to validate other items or scales.

This revised version of the AEQ has since been administered to 260 students on 12 courses in seven institutions. However factor analysis has failed to convincingly
confirm the scale structure and so the original AEQ is still in use despite its limitations. It has been used extensively in the UK and also in large scale studies in South Africa and Hong Kong as well as being used as one of the research tools on the FAST project (Brown et al 2003). It is clearly useful to teachers in terms of students’ responses to individual items, despite some statistical weaknesses in some of the scales.

A large scale study has used the AEQ to compare a wide range of science courses at two contrasting institutions (Gibbs et al, 2003). It showed that the AEQ is capable of distinguishing between students’ responses to assessment features of courses and has highlighted the importance of some features of assessment systems, most notably the volume of feedback students receive. Its use has prompted a range of follow-up studies and innovations on a range of science courses, through the FAST project.

The study also showed that institutional variables contributed more to variance in students’ responses than did courses – in other words there are global institutional characteristics of assessment regimes that have a significant impact on students’ learning responses regardless of differences in assessment systems between courses within those institutions. These characteristics are likely to include, for example, assumptions about how much coursework is appropriate or how little feedback is acceptable. As a consequence of this finding the next stage of the research will examine the impact on student learning of global assessment environments characteristic of entire institutions. Funding has been obtained from the Higher Education Academy for a pilot study entitled ‘The effects of programme assessment environments on student learning’ which will use a modified version of the AEQ to examine the impact of programme-level assessment environments on student learning using the grid below to distinguish between features of three contrasting environments.

<table>
<thead>
<tr>
<th>Aspect of assessment</th>
<th>Oxbridge</th>
<th>Post-1992</th>
<th>Pre-1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume/frequency of formative assessment</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td>% marks from exams</td>
<td>High</td>
<td>Low</td>
<td>Medium</td>
</tr>
<tr>
<td>% marks from coursework</td>
<td>Low</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Alignment of learning activity with assessment</td>
<td>Low</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Explicitness of goals/outcomes and criteria</td>
<td>Low</td>
<td>High</td>
<td>Medium</td>
</tr>
</tbody>
</table>

Section 6 Improving student learning through institutional learning and teaching strategies

Background

When collecting case studies for a book on teaching large classes in the early 1990’s (Gibbs and Jenkins, 1992) it became clear that many of the kinds of changes necessary to support student learning in large classes were nearly impossible for individual lecturers to implement because many characteristics of the institutional infrastructure prevented appropriate change. Most such innovation could not have been mainstreamed however visionary or enthusiastic an individual lecturer or even a department head might have been. When running workshops as part of the ‘Teaching More Students’ initiative I regularly used a flip chart to list all the infrastructure blocks that were identified by lecturers as preventing them from being able to implement the ideas that were being discussed.
When I was working on a follow-up national project on resource based learning a new range of infrastructure blocks emerged concerning library policies, print room budgets, how finances were allocated to use of e-learning, and so on. To a planned series of ten discipline-specific guides concerned with implementing resource based learning I added an eleventh about the institutional context necessary to support resource-based learning (Gibbs et al, 1995) written jointly with two librarians. I subsequently updated this practical guide in the form of a more theoretical chapter (Gibbs, 1997b).

By that time the MacFarlane Report (CSUP, 1992) had been published in Scotland which identified many of the same institutional infrastructure problems, but which unfortunately proposed the use of information technology and the sharing of learning materials as the solution to all problems. In England, the Enterprise in Higher Education Initiative and the Teaching and Learning Technology Programme had allocated very significant sums to projects, but had often left hardly a ripple in their wake. Here, in addition to technical weaknesses and infrastructure problems, institutions lacked the change mechanisms to take an innovation and embed it securely and spread it across internal boundaries.

A range of blocks to innovation in teaching were also identified by Hannan and Silver (2000) as a result of detailed case studies of innovations that had been recognised by national awards. Additional blocks identified in his research included the lack of reward for lecturers who took innovation seriously, and the lack of mechanisms to allocate lecturers' time to course design.

While the Dearing Committee (National Committee of Enquiry into Higher Education, 1997) was sitting it became clear to the Higher Education Funding Council for England that there would be criticism of the slow rate of change in teaching (compared with the rapid rate of change in context) despite investment in national scale initiatives exceeding £130m. I was seconded to the HEFCE to review all previous national attempts to improve teaching, in the UK and elsewhere, and to recommend a national strategy for bringing about change more quickly and more widely. My confidential report led directly to the establishment of the Teaching Quality Enhancement Fund and with it the Learning and Teaching Support Network, the Institute for Learning and Teaching in Higher Education (also recommended by Dearing) and, most importantly, funding for institutional learning and teaching strategies. Between 1997 and 2004 £100m has been allocated to English HE institutions to develop and implement learning and teaching strategies and a further £17m was allocated in 2004.

Auditing institutional strategies

Before such significant funding was allocated the HEFCE wanted reassurance that institutions were in a position to use the funding to good effect, and guidance so that those institutions not at the forefront of change could learn from the others. I was commissioned to undertake a review of all existing attempts in English institutions to use policy and strategy to improve teaching at an institutional level. I asked the HEFCE to request of all 134 English HE institutions whatever current documentation existed and the request was accompanied by a short questionnaire about the history of such efforts. I visited those institutions with interesting or more developed strategies and tactics, including some outside England and carried out informal interviews and discussed documentation with key staff.

I had not undertaken a rigorous document analysis before and had to invent mechanisms that would allow a quantitative analysis so that a succinct overview
could be presented and so that change over time could be readily monitored. The crucial steps were to develop categories of analysis that were robust and which could be used consistently across different kinds of documentation, and then to check on this reliability through blind ratings from two independent judges. This involved a first stage of identifying potentially valuable foci of categories and then successive stages of definition and redefinition of categories until they were unambiguous and could be applied consistently when coding.

The resulting analysis was presented in the form of a research report (Gibbs, 1999b). This report provided sufficient evidence of capacity in the system to implement learning and teaching strategies to convince the HEFCE to fund the initiative.

I re-wrote the research, adding case material, as an HEFCE Circular (HEFCE, 1999). This circular was reprinted several times by HEFCE in response to demand as it was widely used by institutions both to plan their learning and teaching strategies and to support debate at institutional and departmental level about strategic attempts to improve teaching.

In 2000 I was commissioned to repeat the same analysis. This led to a consultancy report, an HEFCE Circular (HEFCE, 2002a) and research report (HEFCE, 2002b). This was the first time that the HEFCE had comparative data about progress being made across the sector over time in attempts to improve teaching. The progress was sufficiently clear from the data to lead to a further £50m of funding being allocated to extend the learning and teaching strategy initiative for a further three years.

**Publication 18** (Gibbs et al 2000) reports this work in a journal article.

The next stage of this research involved documenting the way particular change processes commonly used in learning and teaching strategies were being implemented, and identifying underlying themes and issues to guide choice of tactic. This led to publications on recognising and rewarding excellent teaching (Gibbs and Habeshaw, 2002) and funding innovation and embedding change (Gibbs et al, 2002). I have written about the implications of learning and teaching strategies for educational development activities (Gibbs, 2000a) and for the development of capability (Gibbs, 2000b). I have also made presentations to a number of national and international conferences about being strategic about improving teaching (Gibbs, 2001, 2002b, 2003b). I have been commissioned by both the Welsh and Scottish Higher Education Funding Councils to make presentations to senior management of institutions about how to implement learning and teaching strategies. I continue to undertake consultancies to institutions that are planning strategic approaches to developing teaching (e.g. University of Copenhagen, October 2005).

**Learning and teaching strategies in research-intensive environments**

The successive national reviews conducted in the UK revealed much slower and less embedded progress in teaching and learning strategies in research-focussed institutions than in teaching-focussed institutions. Starting in 2004 I used a National Teaching Fellowship award of £50,000 to establish the ‘Oxford network for developing teaching in research-intensive environments’ in order to connect the University of Oxford with benchmark institutions with more developed institutional strategies including MIT, Stanford, Princeton, Cornell, Queens (Canada), Helsinki, Oslo, Lund, Utrecht, Leuven, Edinburgh and Sydney. I have undertaken case study visits to each institution and written the cases and an overall analysis for the network’s web site. I convened a two-day meeting in Oxford of the member of senior management responsible for educational policy and the head of teaching.
development from each institution to explore the underlying rationales and the
effectiveness of the institutional strategies and tactics. Further meetings are planned
in Utrecht (2006) and Oxford (2007). I have obtained £99k from the Leadership
Foundation to study departmental leadership of teaching in each of the network
institutions, based on the work of Ramsden (1998). Insights have been presented at
the Higher Education Academy conference on Complex Organisational Change,
(June 2005) and as a keynote presentation to the Higher Education Research and
Development Society of Australasia conference (Gibbs, 2005) on findings from this
research about learning and teaching strategies in research-intensive environments.
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GIBBS, G. & SIMPSON, C. (2004b) Improving student progress and retention through tutor interventions: evidence from large scale experiments at the Open University (UK). International Conference on Distance Education, Hong Kong.


NORTHEDGE, A. (1975) Learning through discussion in the Open University. Teaching at a Distance, 2.


Appendix 1 Citation analysis

This data uses the Thompson Web of Science citation methodology that identifies citations in listed top-ranked journals since the digitisation of journals.


GIBBS, G. & COFFEY, M. (2004) The impact of training of university teachers on their teaching skills, their approach to teaching and the approach to learning of their students. Active Learning, 5,1, pp87-100 1


Most cited other publications referred to in the above text:


GIBBS, G. & NORTHEdge, A. (1979) Helping students to understand their own study methods. British Journal of Guidance and Counselling. 7(1). Pp92-100
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Improving students' studying often consists of giving advice or training in new techniques. This directive approach tends to embody conceptions of learning which are far removed from what students are willing or able to take on, and can misorient students towards inappropriate goals and interfere with natural nature of study tasks to be explored from the students' existing standpoints — emphasising the purposes of study tasks rather than their mechanics, and utilising people's capacity to develop their own learning strategies. Such an approach is illustrated with a practical application.

The problem
If a university lecturer feels that his personal tutees are not going about some of their studying as effectively as they might, what is he likely to do about it? He may not feel competent to handle the task, or he may lack the time to think about how to handle it. If this is the case, there may be agencies within his institution to whom he can refer his students — a counselling service with known expertise, as for example at the University of Birmingham, or a special unit as at Strathclyde or Sussex. Or he may, if he or his students have sufficient funds, 'buy in' expertise — in the form of, say, Tony Buzan or Laurie Thomas. But if he decides to tackle the task himself, his mode of helping will almost certainly be that of offering advice. There is plenty of cheap advice readily available in paperbacks. Judging by its proliferation in university bookshops, there is still a huge market for it. Indeed, much expert help is based on this same advice (for example at the Strathclyde and Sussex units), though it tends also to involve putting students through exercises which ram the advice home. The advice generally sounds plausible, and often carries an air of scientific credibility. So the decision simply to offer it seems obvious. Why then are we still worrying about how to help students with their studying?

What happens when students are given study-skills advice?
Our impression is that a great deal of well-meant study-skills advice is given, but very little is followed. Many students who come into contact with such advice reject it almost immediately. Much of it embodies an image of an extremely efficient, methodical, and self-disciplined 'perfect' student — an image which is not attractive to everyone. The recommended ways of studying do not often seem to involve excitement, personal exploration, and the unpredictability which makes studying other than a chore. Moreover, students tend to feel alienated from the advice and threatened by it, since it implies an enormous gap between how they currently work and what is seen to be necessary.

The anxiety surrounding self-doubts about ability is one of the central problems facing study advice. When at a recent induction session for new students at the University of Surrey, we administered a questionnaire on 'What I feel about being here', all agreed with the statement 'I'm sure these people are brighter than I am'. Describing impressive-looking study methods adds to these anxieties, and students are likely to reject the advice in order to avoid the anxieties. Some study-skills courses seem aware of this but feed on the anxiety by deliberately shaking students' confidence in the adequacy of their existing study methods, merely in order to make new techniques seem more attractive and necessary.

Sometimes advice is not understood, or its intentions grasped. The reading method SQ3R (Rowntree, 1970, p. 39), for example, is meant to loosen up reading and to free readers from rigid unadaptive habits. But the comments of some students suggest that it may itself be understood as an inflexible set of rules and seen as a tedious and irrelevant route to have to take. In other cases, the very communication of the message may embody such contradictions. One model of flexible reading (Open University, 1976, worksheet 4.4) uses an algorithm to convey its message. One might argue, however, that the algorithm presents an appearance of inflexibility. For example: 'Is the book a collection of articles?' 'Yes' 'Preview: rapid skimming of whole book, establishing content, structure, tone. Do you intend to read on?' 'No' 'Is the book only useful for certain parts?' etc. There would appear to be a conflict here between the intention of the advice and the effect it would be likely to have if it was followed.

In many cases, moreover, it is not at all clear how one might follow the advice offered. Many suggestions are hard to implement. For example, telling students that essays need structure may be telling them no more than they already know. The problem for most of us is knowing how to go about achieving structure.

Some advice seems misconceived. For example, it may not seem unreasonable to advise students forming sentences in writing to think clearly to the end of the sentence. As Britton et al. (1975) argue, however, this is simply beyond most of us. We need to begin a sentence before we have a good idea of how the end will turn out. The almost universal advice to plan essays and produce a structure as a first step seems similarly misconceived. Frequently writers work best in the early stages without plans (Britton et al., 1975, p. 27), building up a conception of the finished product, and formalising plans through a messy multi-stage process of writing and revision.
What happens when students take advice?

The consequences of actually taking advice, when the conception of learning of the adviser is markedly different from that of the learner, has been discussed in detail elsewhere (Gibbs, 1977a). We would like here simply to outline two recurrent themes.

Firstly, attempting to take such advice often results in a gap between 'knowing' and 'doing'. Students can repeat back advice on how to study, while at the same time being unaware that they are themselves not taking that advice. In terms of learning professional skills, this gap has been conceptualised as the difference between a person's 'theories of action' (i.e. his self-explanations for what he is doing) and his 'theories-in-use' (i.e. the theory that actually governs his actions) (Argyris and Schon, 1974). A student can rote-learn an adviser's 'theories of action', and even believe these theories to be determining how he studies, without allowing them even remotely to affect his 'theories-in-use'. For example, a student may never review his notes, finding it a dull and profitless activity. Nevertheless, when he is asked why he takes notes, he will say: 'In order to review them afterwards'. The more alien these 'theories of action', the less likely it is that this conflict will be resolved.

It is ironical that it seems to be exactly where espoused 'theories of action' are claimed to be based on learning theory and supported by empirical evidence from psychological research that they are most alien to students' 'theories-in-use'. We would like to make a digression here to look more closely at these claims for scientific validity. If the claims are weak, then there can be little excuse for giving study-skills advice.

The 'scientific' basis for study-skills advice

In texts on study methods, learning is often described as being constrained by rapid and debilitating forgetting (e.g. Buzan, 1974, p. 139). Such descriptions are often accompanied by graphs of dramatic forgetting curves, with the y-axis labelled 'amount retained' and the curve plummeting towards a point about an inch along an unscaled x-axis labelled 'time' (e.g. Freeman, 1972, p. 21). The root of such descriptions, as far as we have been able to establish, lies in experimental evidence concerning the rote memorisation of lists of nonsense syllables over many trials (Ebbinghaus, 1885). In such experiments not only is the material to be learnt (lists of nonsense syllables or unrelated nouns) quite unlike the subject matter of studying, and the method of learning (recitation over many trials) unlike anything a student would willingly undertake, but the ways of measuring learning (cued recall and re-learning to mastery) are unlike the uses students make of their learning, and even unlike the ways their learning will be evaluated. In contrast, evidence has been available for over 40 years that dramatic forgetting does not occur for much academic learning (e.g. Tyler, 1933).

The original evidence for the value of overlearning (Krueger, 1929) and rehearsal at progressively longer intervals (incredibly, 'Jost's Law' — Jost, 1897, based on data from Ebbinghaus, 1885) comes from a similar experimental paradigm. Nevertheless, students continue to be advised to overlearn, and to review their notes immediately after a lecture, after one day, after one week, after one month, and so on (e.g. Buzan, 1974, p. 56). Apart from the somewhat doubtful relevance of the experimental evidence, and the possible misorientation of students towards inappropriate educational goals (such as rote learning), such advice can lead to bizarre outcomes. A student taking notes from three lectures a day, and following advice about the necessity for such periodic review, will by the fifth week of lectures already be reviewing 60 sets of lecture notes per week! To be fair, the perpetrators of this advice generally describe such periodic review as an ideal (e.g. Main, 1977). We suggest, however, that it will not be an ideal for many students. This is not to deny the value of looking over one's notes before they are filed away for good. But the value of such review seems more understandable in terms of the resulting structuring of the material than in terms of increases in the strength of the memory trace. We believe that students will find it both more stimulating and more productive to commit much of their time to reading new material rather than concentrating so obsessively on memorising previous notes. We would as soon see widely-read enquiring students as see efficient parrots.

Another common conception about learning embodied in advice is the 'learning plateau'. This is described as a phase when, following an initial surge of learning, little progress can be expected for a while (e.g. Freeman, 1972, p. 19). A student once explained to us that the reason why she was no longer getting anything out of her course text was that she was probably at the learning plateau which she had been told to expect. Most advice does not state the source of this conception, but Maddox (1963, p. 51) at least describes its experimental basis. The phenomenon is most evident in motor-skill training, and Maddox's source is probably Book (1925). Book reports evidence of 174 consecutive daily half-hour practice sessions on a typewriter. After about 50 days there was a slight levelling off, for 20 days, of the daily increase in number of correct typing strokes made during the session. On the basis of such evidence, our student would have done well to seek a less passive explanation of her study problem. Perhaps there is something in the idea of phases of assimilation alternating with phases of accommodation. It is clear, however, that the evidence as to the nature of peaks and plateaux in higher level learning rate is as yet very scanty.

Advice concerning how long study periods should last, and when to take breaks, is drawn from data averaged across wide inter-student (as well as intra-student) variation in performance. There can be little likelihood that the hallowed rule of studying for a maximum of three hours, with breaks every hour (e.g. Freeman, 1972, p. 9), will be the ideal for every individual student working to a particular goal on a particular study task. Decisions about how long to keep on studying must be based on the values attached to the perceived outcomes of the studying, not on fixed general rules. This
To detect the differences in learning outcome resulting from different study behaviours, learning is typically packaged in small and separate 'easy-to-handle-and-measure' bits. Only learning outcomes specified in advance by the experimenters are considered valid. As a consequence, study behaviours demonstrated to be effective tend to be described in the context of neat, isolated learning tasks with clear pre-specified objectives. But most study is not like this. The value of personal, idiosyncratic syntheses of ideas achieved while soaking in a bath cannot easily be explored by reductionist techniques, and so such phenomena tend to be omitted from study experts' descriptions of learning.

The conceptions of learning underlying advice
To some extent there is a common underlying conception of the nature of learning embodied in study-skills advice. Northedge (1976) has described this in terms of 'brick-building' assumptions about the learning process. Learning is seen as the routine manipulation of individual bricks of knowledge by discrete skills, building a pre-planned structure which resembles the structure of the teacher/text/subject-area as closely as possible. Such conceptions may be useful within the framework of fact and technique learning where it is feasible to attempt to evaluate students' mastery of information. They may also be useful in the context of learning the tightly-defined concept systems which form the basis of many maths and science courses. But in the case of more open concept systems (as in the social sciences, for example) where conceptual leaps bridging isolated concept systems are more characteristic learning goals, such assumptions seem inappropriate. Following advice embodying these assumptions tends to lead to types of studying described as perfunctory (as opposed to real) (Britton et al., 1975) and surface level (as opposed to deep level) (Marton, 1975).

The first common consequence of students taking advice, outlined earlier, is a gap between knowing and doing. The second is that students are often oriented towards inappropriate educational goals: towards rote memorisation rather than conceptual development; towards speed rather than depth; towards the mechanical application of study skills rather than the flexible search for relevant learning strategies; towards extrinsic, instrumental goals rather than personally significant learning goals. A classic example is provided by a popular text on reading skills (De Leeuw and De Leeuw, 1975) which requires the reader to tackle a difficult and confusing Bertrand Russell essay as fast as possible, and then tests 'comprehension' with multiple-choice, recognition-memory questions.

A student-centred alternative
It is naive, we believe, to suppose that a model of advice requiring of students a passive acceptance of techniques could genuinely orient the students towards independent and self-directed learning strategies. We in

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The sheer quantity of 'required' and 'recommended' reading confronting most students must often seem to them rather overwhelming. It seldom fails to comfortably exceed the quantity of new and unfamiliar material which one might reasonably expect them to be able to read thoroughly and assimilate. There is sometimes a realisation of this difficulty by those recommending the reading when instructions take the form 'You don't have to read all of this book, just have a look at it'. Unfortunately 'having a look at' a book isn't often something inexperienced students have much familiarity with. It can come as a revelation that a book may contain only one or two central notions, and that most of the book consists of elaboration of, evidence for, and implications of, these notions. These basic notions might be contained within the blurb on the dust jacket, and it is often possible to get a pretty fair idea of what a book is about in a few seconds. One of my students was so astonished by the idea that one can work through books usefully by reading only the first and last paragraphs of each chapter that he promptly devoured five of his set books in one evening in this way!

This session is intended to explore the possibilities of using books in new ways. Choose as material any reasonably structured book — if possible subject-related (even an Open University 'block') which is far too long to 'read' but has some reasonably coherent message (i.e. not a book of readings).

**ON YOUR OWN**

(1 min)

'You are about to attend a tutorial/listen to a radio programme, on this book. You only have one minute to check out what it is about — off you go!'

(2 mins)

'OK, now write down what you think the book is about — as much as you have gathered in your one minute.'

**IN PAIRS**

(10 mins)

'Compare what you have written down, and compare how you found it. Do you think you've got to the heart of it?'

**ON YOUR OWN**

(10 mins)

'OK, you are going to have to explain what you think the book is about to your neighbour after you've had 10 minutes to work on it.'

**IN PAIRS**

(10 mins)

'Taking it in turns, one of you explain to the other what you now believe the book to be about. How did you gain that understanding? Do you both understand the same thing? Did you both look at the same parts of the book?'

**IN FOURS**

(15 mins)

'Share your understanding of the book. What were the best ways (and the worst ways) of gaining that understanding? Did your initial one-minute scans affect the way you used the book.'

**PLENARY**

(10 mins)

'Each group, in turn, explain one good (or bad) way of getting to grips with the book in a short time. Did other groups use those methods?'

(Continue till items are exhausted)

The extent of participation greater than when students go straight into groups of four unprepared, and very much greater than in larger, tutor-led groups. The subsequent plenary stage is used to share experiences and ideas across groups, and serves mainly to let people know what has been happening outside their own group. This stage is not ideal for exploring new ideas, the more flexible context of the preceding stage in smaller groups being more suitable for this purpose.

The group designs are not foolproof. Others have told us of failures, and they have not always worked for us either. Moreover, because of the open nature of the groups, they can be tricky to handle once things start going wrong. We are at present trying to understand how to minimise the chance of occasional failure.

It might be argued that the design could be simplified by reading out to the students the explanation of the purpose of the session. Indeed, the outcome of the plenary session can often sound like a description of advice which one might have given oneself at the outset. The significant point here, however, is that the students will have reached such a description starting from their own actual approaches, and through discussion based on their own conceptions of the task. They will have been exposed to approaches used by fellow students, which are often of greater apparent validity than those of experts. The whole process is active, and all decisions are based on the judgments and values of the students themselves.

The role of the tutor in such groups is rather like that of a client-centred therapist or non-directive encounter-group leader. His aim is not to present his own interpretations of study processes for the benefit of others, but to provide both a structure within which change is possible and attractive, and a task which focuses the group's activity, much like the facilitator role described by Rogers (1969, pp. 164–166). This frees the tutor from the role of expert, and also frees the student from personal comparison with alien and intimidating study approaches. Those tutors who feel uneasy without the expert's role can take up this role at the plenary stage. By this stage of sessions students at least have a mobilised and articulated framework to bring to bear on, and evaluate, whatever advice is offered. This may be sufficient to enable the student to reject incompatible and unsuitable advice. In fact, students seem to appreciate it when the tutor offers an interpretation of his own study methods, and an analysis of his own problems and strengths. Provided there is not too much of the 'you should be like me' about it, this can give the students a useful model of someone who thinks about, and tries to improve, his own studying.

The freedom such sessions give to tutors to listen to and understand study problems expressed in students' own language may be one reason why this student-centred approach has been taken up so widely. At present we estimate that some 500 people are using the approach to run sessions, or courses, with their students. It seems to be equally applicable to school and university settings, the content of the sessions being determined by the level at which the students experience their studying. Moreover, it is not dependent on special knowledge or the help of special study-skill advisers. We are currently evaluating the great variety of uses to which the approach is being put in order to improve and expand our existing guide to tutors (Gibbs, 1977b).

Finally, we would like to make a point about the relationship between the processes involved in 'learning-to-study' sessions and students' everyday development as learners. What goes on in the type of student-centred session described here can easily continue outside the session. Students can easily
question the purposes of their own studying and compare their ways of tackling tasks with colleagues. The most valuable impact of such sessions may indeed well lie in encouraging in students a questioning and self-analytical attitude to their own learning strategies, which can continue to be of use to them as their studying develops. This contrasts with the giving of advice and the training in specific techniques, where students remain dependent on further inputs from 'experts' to bring about further change. Learning to study is not a simple one-stage process. Interventions do not bring about immediate changes in study effectiveness (except perhaps at a micro level). The design of such interventions must take into account the fact that learning to learn is a continuous life-long process.

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Publication 2

TEACHING STUDENTS TO LEARN
A STUDENT-CENTRED APPROACH

How can teachers and lecturers in post-compulsory education improve the learning skills of their students? How can they help them to adjust from a heavily structured to a ‘self-help’ learning context? Is there an effective approach which is neither too time-consuming nor too demanding of special expertise?

Graham Gibbs answers these questions in an essentially practical way, providing and explaining appropriate exercises for use with students. He shows the success of easy-to-run, relatively brief, interactive group sessions which emphasise student-centred, self-directed learning.

Every lecturer knows that it is not enough to simply give advice on study methods: students need active involvement to improve their learning skills rather than passive listening to precepts. They need time and space to examine not just the content of their learning but also its process.

One-to-one counselling is one effective method of doing this but it is very time-consuming. In any case, most teachers have not had much experience of helping students to explore their learning processes. Not unnaturally, they turn to books for advice. However, books for teachers on this subject are simply not available; there are over a hundred ‘how to study’ guides written for students but these are of very limited use to teachers.

This book now provides teachers with a tried and tested practical approach, detailing actual exercises and explaining their rationale. Teaching Students to Learn bridges the huge gap left by the current practices of one-to-one counselling, overt advice to groups of students, and simply directing students on ‘how to study’ books. It is essential reading for all teachers and lecturers in post-compulsory education.

Graham Gibbs studied Psychology at City University and University College, London before researching into tuition and counselling in the Institute of Educational Technology at the Open University. He went on to head the Study Methods Group which researched into how Open University students go about their studying and how they develop in their study methods. He is currently a Principal Lecturer and Head of the Educational Methods Unit at Oxford Brookes University.

Graham Gibbs

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Teaching Students to Learn
A Student-Centred Approach
Teaching Students to Learn
A Student-Centred Approach

GRAHAM GIBBS

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Students new to higher education, and even those new to sixth forms, are asked to tackle learning tasks which make demands on them different from any they have ever faced before. It is not simply the sheer quantity of material to be learned, or even the new responsibilities students have to take for the way they go about this learning, which makes the heaviest demands. The meaning of learning itself changes. Students have to become independent not only in their self-discipline and self-organization in order to cope with studying, but also, ultimately, in their epistemological stance.

While I passed 'A' level history at school by memorizing the eight causes of the French Revolution, history students at the institution where I now work are asked to evaluate alternative theoretical frameworks for making sense of such social changes as those associated with the French Revolution — and this in their first term, perhaps only four months after taking their 'A' levels! This sort of difference in the nature of learning tasks can be enormously difficult for students to recognize and adjust to. While teachers can help in the teaching methods they use and in making their teaching goals explicit and clear, this is often not enough. Students need time and space to examine not just the subject matter of their learning, its content, but also the process of their learning itself. Most teachers do not have a lot of experience of helping students to examine the process of their learning, and they not unnaturally turn to books on the subject for advice. However, until very recently there were simply no books written for teachers on this subject. There are over a hundred How to Study guides written for students, with advice on how to take notes, how to concentrate, and so on, but these are of very limited use to teachers. It is the ineffectiveness of simply giving advice to students that led to the development of the methods described in this book. If you feel your own students could be going about their
learning in a more thoughtful and purposeful way, and you would like
to do something about this in a way that does not make heavy demands
on your own time or expertise, then this book is for you.

It is based on an earlier booklet: Learning to Study – A Guide to
Running Group Sessions (Gibbs, 1977). This booklet was initially written
for Open University tutors and was intended to provide them with
‘off-the-shelf’ exercises which they could run with their students at
tutorials. Very quickly requests for copies started coming in from
outside the Open University. Without publicity or marketing, I had
received over 3,000 requests from all over the world by 1980, and the
exercises in the booklet were being used from Japan to Brazil, and from
New Zealand to Finland. There is obviously a huge unmet demand from
teachers for help with ‘study skills’ which goes beyond the conventional
giving of advice to students. This book is designed to help meet this
demand by expanding and improving the earlier booklet. Perhaps most
importantly this volume contains a more complete rationale. Initially I
felt that the approach I had adopted to teaching students to learn was
intuitively correct and seemed to work. Now I have been able to relate
the approach to important developments in research into student learn­
ing. I also now have the benefit of an overwhelming amount of feedback,
from others who have adopted this approach, about how it works in
practice. As a consequence I feel that I now understand what I have
been doing rather better than I did. I hope this understanding comes
through.

The second major development from the earlier booklet is that
questionnaire feedback indicated that many teachers were using the
general principles embodied in the booklet, but not using the particular
exercises the booklet contained. In this volume, I have emphasized
rather less the exercises I recommend, and paid more attention to how
to design your own exercises within the same overall framework.

I should like to acknowledge the role of Andy Northedge, of the
Open University, in the creation of many of the most important ideas
in this book. Andy has played a large part in the development of my
thinking and I could not have written this book without him. It would
have been a better book if he had been able to contribute more directly
as he had originally hoped to do.

I should also like to acknowledge the help of the students who have
worked through exercises with me and so helped me to improve them,
and the many many people who have written to me with useful com­
ments gleaned from the experience of trying these exercises out with
their own students. And finally I should like to thank Cathy Urwin for
reading the manuscript and seeing, through its inconsistencies of argu­
ment and style, ways of making it readable.

How to use this book

I have divided this book into two parts: the first is concerned with
practical issues of how to actually go about teaching students to learn
and the second is concerned with theoretical issues and the rationale for
the teaching methods described in Part 1.

If you are in a hurry, if you need an idea for an exercise for the class
you are taking in fifteen minutes time, then you are in luck. Any of the
six exercises in Chapter 2 can be picked up and used without any special
skills or knowledge. Choose your topic, read the Notes which go with
the topic and follow the Instructions. You may also need to copy a
handout for your students. These six exercises all work reliably and are
very safe and easy to run. I believe this is the quickest and most effective
way of finding out what this book is recommending. Off you go!

Chapter 1 addresses practical questions about how best to use these
six exercises. Who are they for? When is the best time to use them? If
you have the time to plan your use of the exercises, or feel hesitant
about trying anything without knowing a good deal more about it, then
I suggest you have a brief look at one or two exercises and then read
Chapter 1.

Almost everyone who tries using one of these exercises goes on to try
another. Once you are at this stage you may well want to know more
about the approach I have adopted and why the exercises are in the
form they are. The rationale for this approach is elaborated in Part 2
of the book. The rationale consists of discussion of four main questions:
‘Why not just tell students how to learn?’ ‘In what ways do students
develop as learners?’ ‘How can students’ development be facilitated?’
and ‘Why use structured group exercises?’ each of which has a chapter
devoted to it. I have put this rationale at the back of the book because
while it is important to me (and important to those who like a sound rational basis for what they are doing) it seems not to be necessary for many. People seem to be able to pick up enough rationale experientially by running exercises and seeing what goes on and what outcomes emerge.

Once people become committed to using the approach described in this book, they very often go on to use the general principles of the approach while abandoning the narrow confines of the specific exercises suggested here. They design exercises of their own which address learning issues specific to their students on the course or discipline within which they teach. Going beyond what these exercises offer seems to be an important part of using the approach, and so I have included a chapter specifically on designing your own exercises, Chapter 3. Unless you feel very confident very quickly, I suggest you try using one or more of the exercises in Chapter 2, more or less as they stand, before you go on to design new exercises for yourself. Each of the exercises has been chosen to embody a different device which can be used in its design. For example the exercise called 'Reading: using books' uses the device of getting students to do something they might not normally do in order to introduce some new ideas about using books. You may find it useful to use such devices as a part of exercises that have been tried and tested before you take them out and use them in your own way.

PART 1

A student-centred approach in practice
How to use the exercises

This chapter answers most of the practical questions which teachers ask about the use of the exercises in Chapter 2.

Who are these exercises designed for?

These exercises were originally designed for first-year university students. Since then they have been successfully used with polytechnic students, college students, sixth-formers in schools, experienced teachers undertaking postgraduate studies, adults preparing to study with the Open University, and with mature overseas students about to start postgraduate study. Students who are already studying and have begun to encounter the realities of study seem most likely to benefit — indeed some of the exercises are based on students’ experience of studying.

Most teachers seem to use these exercises with their own classes of students — in other words groups of students of similar experience, studying the same subject. However, many have run interdisciplinary exercises attended by groups of widely differing experience. It has been found to be common for third-year undergraduates and first-year postgraduates to regularly attend sessions put on primarily for first-year undergraduates. Similarly groups containing, for example, a mixture of engineers, social scientists, business studies and design students have worked regularly together. The mixture of experience, level and discipline adds to the variability of ideas and study methods and experiences, which can be very illuminating and eye-opening. It can also make it very difficult for students to transfer the rather
generalized lessons learnt from the exercises to their own specific learning context. Homogeneous groups can work around study materials (e.g., essays, books) lifted straight out of their own course, which makes the whole exercise more immediate and relevant. However, this too can bring problems. Students can easily get wrapped up in understanding the subject matter, the content of the learning, and lose sight of the process of learning it. There may also be too little variability in approach and perspective to generate the controversy which can be so important in these exercises.

Over time I have probably moved away from running exercises for mixed groups towards running exercises for a group of students who know each other and are studying the same material. The advantages for group dynamics of the structure of the exercises offered here has therefore become less crucial, and the materials offered as subject matter less likely to be appropriate. I would adopt a degree of structure to the sessions, and choose my materials to suit the type of group I was to work with.

How many students are these exercises for?

The structure of these sessions enables very large groups of students to be handled. I have run such exercises with 450! Probably an optimum size, if ideas are to be freely exchanged and some development and synthesis is to take place, is twelve to forty. Above forty the structure must be followed rather rigidly as it is difficult to get useful feedback in order to respond to the group's requirements. Also the plenary stage becomes difficult to run and less productive. Groups of much below twelve become less alive. There seems to be a 'critical mass' for the generation of energy and excitement. There are fewer ideas to share and compare, and the structure becomes increasingly unnecessary until with fewer than six students it can become rather artificial and stultifying. Some of the exercises can still work well with only a couple of students, though inevitably your role as a tutor will necessarily become more prominent and this may inhibit students considerably — some of the student-centred purpose of the exercise may be lost.

Students often have no experience of working in groups with little or no input from a tutor and some find this rather difficult. I suspect that some students may be unhappy about taking part in an exercise for more than about twenty people because they get so little 'personal attention'. Some such students may not easily come to trust their own learning and I would expect such students not to turn up after the first exercise or two unless this issue is explicitly picked up and discussed.

How long do these exercises last?

The exercises are designed to take an hour. Questionnaire feedback suggests that none of these exercises consistently require more or less time. In fact as many teachers find particular exercises to require more as to require less time. Some individual teachers have reported that every exercise required less than an hour and we suspect this to have been due to the particular style of the teacher or lack of interest of the particular students. In my own experience the time required depends on the degree to which the initial task engages the students in a real way and taps their thoughts and feelings about their studying. The nature and relevance of the materials used and the description of the task by the teacher seem crucial to this. Irrelevant materials presented with vague task instructions tend not to engage the students and the exercise will not last as long. I have often found an hour and a half more realistic target if I am not to rush my students, though it seems best, if it is possible, to respond to what the group appears to need on each specific occasion rather than stick rigidly to a preconceived plan. It is sometimes hard to predict how much students are likely to discover in a task and the timing offered with each exercise can only be a general guideline.

When, and in which order, should the exercises be run?

I am not suggesting that you run through all these exercises in the order offered here, or even that you run through them all at all. Where teachers report having done this it seems that their students have eventually felt that the structure has become repetitive and that in any case most of the important issues had been raised and discussed after the first few exercises.

Having said that, the first exercise: 'How do we learn?' is useful as an opener. It gets the group established, well used to the approach and focuses on familiar and threat-free subject matter which students generally share with gusto and feeling. It also establishes a powerful precedent both for the value of personal experience and the differences between students. Everyone has bad learning experiences to relate, (even if everyone cannot always recall a good learning experience) and this makes the session reliable and easy to run. After that it may be best to respond to whatever concerns your students. It is difficult to run a good session on essay writing until your students are actually having to write an essay (or even their second essay!) and students may not perceive the importance of organizing their time until they have deadlines to meet or have even missed a deadline. Similarly it may not be sufi-
cient that your students are attending lectures for it to be worth while running a session on taking notes from lectures. Until notes are needed for some other task (such as writing an essay or report, tackling a problem or preparing for a test) then note taking can become a somewhat abstract or trivially technical topic for discussion.

If you are running exercises with students whom you yourself teach then you will be in a good position to judge when the exercises will be appropriate. The exercise 'Learning from discussion' benefits from students' experience of tutorials or seminars. At the same time it is clear from much of our questionnaire feedback that it can dramatically affect the way future tutorials go, and has been used as a device by teachers to improve the effectiveness of their own small group teaching. So not too early, not too late, seems to be the rule.

I hope it is clear from these points that I would not be strongly in favour of paying a great deal of attention to students studying during, for example, their induction week. I have attempted to teach students about learning out of the context of any actual learning, and I have been chastened by the experience. If you wish to prepare students, then these exercises are likely to be useful only if the students are actually studying their subject during their preparation so that they have some real study experience to relate to, and work on. It is not just that content-free studying makes little sense; in addition the harsh realities and pressures of actual studying demand compromised and pragmatic rather than idealized solutions, and also provide the desire, or even the necessity to implement them.

Exercises on examinations tend to be left until late in the course, even until immediately before the examinations. However, most of the crucial outcomes of an exercise on revision could affect the way studying might be undertaken throughout the year. Your decision whether or not to run an exercise on revision at the start of the year may well depend on whether you feel that if students concentrate on the demands of the examination it will detract from their concentrating on the demands of your course!

What extra materials do I need?

With the exception of the exercise on using books, materials have been provided for every exercise. You can simply photocopy and distribute the materials as they stand. They have all been used many times both by myself and by others. However it can be very helpful to provide your students with materials drawn from their own courses: an essay to mark written by a student the previous year; an article to read

Irawn from the references given in your last lecture; last year's examination paper; and so on. The reality of the exercises and the ease with which students can generalize from the lessons learnt to their everyday studying may be crucially influenced by the nature of the materials used in the exercises.

In addition, some examples of materials may work much better than others. One pair of essays to compare for the exercise 'The author's intention' may raise many crucial issues in an engaging way, while another pair may be dealt with and dismissed by students in a cursory way without anything important arising. As you experiment with these exercises you will probably collect materials that you have found to be potentially stimulating. Finding suitable materials can be the most time-consuming part of preparation for these exercises. I have offered some advice on choosing materials along with the instructions for each exercise.

What sort of room do I need?

Informal rooms with furniture that can be moved around are best. Lecture theatres with banked seating pose real problems and any layout that inhibits participants from facing and talking with each other in pairs and small groups should be avoided. Layouts which place heavy emphasis on an orientation towards the teacher, blackboard, lecturer or whatever authority normally dominates the room should also be avoided. It is hard enough for students to express and trust their own views without loading the dice in the favour of authority.

I usually lay the tables and chairs out so that people naturally form small groups without awkward shuffling and regrouping at each stage of exercises, although very obvious groupings of chairs in fours can also be inhibiting and make participants feel manipulated.

Despite the wrong sort of room and furniture it is still perfectly possible to run these exercises provided the conventional function of the room (e.g., as a lecture theatre) is deliberately avoided. A long introduction from a podium to serried rows of seats will establish a passive roll for participants, whereas a quick and casual introduction from the side may avoid this. Many students have trouble adjusting to a non-passive role, especially in large groups, and architecture and furniture layout can contribute to their difficulties.

Other general advice

In addition to my own experience I have had questionnaire feedback
from about two hundred teachers who have used these exercises, and a
mass of correspondence from teachers all over the world who have tried
the approach or adapted it to their own needs. I have been sent hand­
books and course outlines that teachers have written, developed from
their experience of using the approach. I also have some limited
questionnaire feedback from students and quite a few accounts by
students of their experiences on courses made up of these exercises.

Probably well over two thousand teachers will have been using this
approach, or derivations from it, in 1981, and this has generated a great
deal of discussion and innovation. As a result I have a fairly accurate
idea of teachers' experiences with this approach and can guess what
your experience with it is likely to be.

On the positive side, these sessions seem pretty reliable: students
get involved and believe they benefit; the sessions are easy to run; and
tutors do not give them up after trying them only once. They seem to
improve the general atmosphere, and willingness to share responsibility
for learning, within the group. They save tutors planning time, and give
valuable feedback on what aspects of teaching, counselling and learning
need more attention.

On the negative side, students get bored with the structure of the
sessions after a while. The rigidity of the structure can be relaxed or
abandoned once the group is working well. Also, unless the purpose
and general philosophy of the approach and structure of the initial
sessions is explained, students can resent its 'game' element and wish
for more direct advice. Some rather passive students may ask 'What
do we know now that we didn't know already?' at the end of the
session. It can be hard to recognize what has been gained when there
is no authority behind conclusions other than one's own and one's
colleagues' experiences. Some teachers have found that students wel­
come a concise and clearly expressed outcome to the discussions —
perhaps a handout. In my own experience, the pooled outcome of
plenaries can be pretty useless as a product — it is the process by
which it is achieved that is valuable, though a handout can act as a
useful aide-mémoire to this process.

A problem for the tutor is the temptation to respond authorita­
tively to student requests for direct guidance. 'How many hours
should I put in each week?' can sometimes be answered from factual
information from course descriptions, but the answer is probably
not very helpful to the student. Asking back 'How do you decide when
you have done enough?' might be more helpful. Being an 'expert' seems
to be less helpful than being supportive and gently questioning.

Finally, about half of those who have adopted this approach make
changes of their own. They alter aspects of the structure of the exer-
cises, provide their own materials, or design exercises on other topics
using the same basic structure and principles. Once you have run a
couple of exercises outlined in this book it will become easy to see
how this can be done. As the approach takes a good deal of the
pressure off the tutor it is relatively painless to try out new ideas.
Chapter 3 is devoted to the design of exercises to meet your own
particular needs.
Six exercises to teach students to learn

This chapter contains instructions for six exercises, each designed to last one hour, laid out in a standard way in three parts. First there are some Notes. The Notes discuss the purpose and use of the exercise and raise some issues about the particular topic the exercise is concerned with. Second there are Instructions. The Instructions include the actual verbal instructions you would give to participants together with instructions about timing and the role you play in the exercise. The verbal instructions are not intended to be used verbatim, but merely to give a clear impression of the task you will be setting participants at each stage of the exercise. Finally there are Materials. These differ for different exercises and may consist of an example of the outcome of an exercise, a handout to be used during the exercise, or a stimulus of some sort (such as an actual student essay to be marked by participants) for the start of an exercise. Some of these Materials will not suit your needs and you will have to replace them with some of your own which fulfil the same function but are more suitable for your own particular context.

Each of the six exercises embodies an idea about using structured group exercises which can be used to meet other needs that you or your students may have. Chapter 3 discusses how you can use these ideas to design your own exercises.

Exercise One — How do we learn best?

Notes

This exercise is designed to act as an initial impetus to students thinking about their own learning. It seems to work well both as an introduction to the format of the group discussions and as an initial orientation to students to pay attention to, and value, their own experience of learning. It is an extremely reliable exercise and is usually very animated and involving. The reason for this seems to be that everyone has vivid experiences of learning, especially bad experiences of formal learning. These vivid experiences seem to be quite easy for people to draw on both to identify idiosyncratic characteristics of themselves as learners, and also to tentatively suggest general characteristics of 'good' learning. Even students who passively expect to be told how to learn can be surprised by how much they already know, from their own experience, about the conditions that foster 'good' learning and about what they can do to bring about those conditions.

If the substance of this session seems somewhat hazy and abstract then I suggest you read the Materials for this exercise. They consist of one student's input to the first two stages of this exercise and what he concluded from the exercise. I do not suggest that you use these Materials as a handout to your students at the start of the exercise unless you feel very unsure that they will be able to get going without some such model to prompt them. They are more to clarify the purpose of the exercise for you.

One possible outcome you may have to watch out for is participants who simply blame others for their bad experiences. Groups of teachers may tend to blame student laziness and stupidity and groups of students may tend to blame rotten teaching. If you can orient participants towards the role that they themselves play in learning situations this can help the exercise to be more constructive.

Instructions

Working alone (3 min.)

'Think back to some past experience of learning — it could be at school, in sports, in a hobby, anything that was particularly awful — it may have been boring or humiliating, or you simply learnt nothing at all. Jot down a few notes on why it was so bad.'
Now do the same for a good learning experience — where you learnt a lot, were successful, enjoyed it and were interested. What was it that made learning so good? Jot down a few notes.

Relate your experiences to each other, in pairs. Explain why your experiences were good or bad. What are the main similarities between what makes learning good or bad for you both? In what ways do you seem to thrive or suffer in different circumstances? Try and stick to basing your discussion in your own personal experiences rather than generalizing.

Form a group of four with another pair. From your pooled experiences of good and bad learning, can you see any themes arising? Things which for you tend to characterize good and bad learning in general. Each group of four elect a chairman who notes down what is said under two columns: “Things that lead to unsatisfactory learning” and “Things that tend to support and encourage very satisfactory learning”. Note down as many things as you can under these headings.

I’d like each group of four, in turn, to read out one item from its list. I’d like everyone else to ask that group to explain itself, to make the meaning of each item clear. Also, for each item, I’d like suggestions as to how that might affect the way you are learning here, in this institution, now.

Continue until items or time are exhausted.

Materials

These are the experiences on which one student based his input to this exercise:

Thinking of a bad experience was easy. Even now, forty years after I left school, I can remember my awful French classes. For every lesson we had to learn a list of vocabulary — just twelve or so words and what they were in English. I couldn’t even remember half of them. I’d get two out of ten and have to call out my score so everyone would know. The teacher would be sarcastic: ‘Two, eh Woodworth!’ I could have died. I used to try and try, just staring at the words and saying them over and over, but nothing ever happened. I wasn’t so bad at other subjects, just French.

I suppose it was ‘bad’ because I didn’t learn anything. Nothing. I don’t remember more than a few words of French after three years of French classes twice a week. It was also horrible — I mean I dreaded classes and felt awful while I was trying to learn the words. It just seemed so hopeless and inevitable that I’d do badly.

Thinking of a good experience was much harder. I’ve always associated studying with having to do things I don’t like, and doing badly. But there are things I’ve enjoyed finding out about, but I suppose I haven’t thought of them as studying. A few years ago I got fed up with the ‘holiday snaps’ I used to take with my pocket camera and decided to get better at it. I didn’t know how to choose a decent camera so I went to the library and took out a book on photography. It was a bit technical and off-putting and I told the librarian this and she looked up in a booklet and found an evening class on photography at the local school, and found me a Which? report on which camera to buy. The first evening at the class I felt a bit of a fraud with my shiny new camera. I thought all the others would be experienced and know about f-stops and film speeds and all those things, but it turned out that they were as naive as I was. Every week someone would bring in some photos they’d taken and we’d talk about what had gone wrong and the teacher, a young bloke, would make just a few gentle suggestions. He didn’t overwhelm us with information. Just when we needed to know something, or someone wanted to try something new, like developing their own film, then he’d give us a bit of a talk. It was amazing because I can still explain all the processes involved in developing a film off the top of my head. No effort at all! I didn’t miss a single evening class right through that awful winter.

This is what the student initially contributed to the discussion in pairs, in explaining why his experiences were good or bad:

Obviously I wanted to learn about photography, whereas I didn’t have any choice about being at the French classes. And even though I did try to learn French vocabulary, it was only to pass the tests and avoid being shown up in front of my friends again. I didn’t expect I’d ever use any of the French words. Now when I’ve been to France on holiday I feel I’d like to speak French just a little, but I’ve got a block about it. I couldn’t bring myself to go to French evening classes.
I think some people aren't cut out to be linguists. I didn't seem to have any trouble remembering all the stuff about photography. I was more interested, and anyway I needed to know it if I was going to produce better photographs to take to the next class. The other thing was that at the photography class they were a really nice bunch of people. I didn't feel a fool asking them questions or admitting I didn't know something, though as I've already said, I was a bit apprehensive at first. When the year was over I went back to the library and that technical book made a lot more sense. I've read quite a lot since then and I've now got my own dark room at home.

Finally, this student's conclusions, after he had heard what others' experiences had been and how people were thinking about what these added up to, looked like this:

1. Simply trying to memorize stuff like French vocabulary can be a dull and fruitless task. Trying to understand something (like how to develop films) can be much easier and more enjoyable especially when you need to understand in order to be able to do something (like actually develop films). It can even make memory practically effortless.

2. Being anxious about learning (my two out of ten in class, and expecting others at the evening class to be experts) can really limit what you learn or even stop you starting.

3. Discussing what you learn (like with the photography class) seems to help. I think I get a lot from the social support.

4. Discovering things for myself and following up my own interests and being sort of actively involved in what I'm doing seems to make a lot of difference.

5. Learning what you want to learn is easier than learning what others want you to learn.

And there's loads of other things like it's easy to get overloaded with information (like my first encounter with the library book on photography) and starting gently can lead you to managing what you want in the end — like I managed to cope with the library book in the end.

Exercise Two — Organizing yourself

Notes

How organized students are is the one aspect of their studying that consistently correlates quite highly with examination results. Well organized students do better.

Some students, especially those straight from school or some other institution which limits personal responsibility, will have had very little experience of organizing themselves. For these students fairly simple and apparently obvious tips about planning and time management (like 'keep a list at hand of the tasks you've currently got to complete' and 'draw up a timetable of how you spend your week') may seem quite attractive and even be useful. For most people, however, ideas about how to be organized seem like lists of virtues. They all seem rather familiar, and thoroughly commendable but you also feel pretty sure that you personally will not ever become like that. How organized you are is a fairly fundamental part of who you are and how you are. Perhaps more than with any other aspect of learning, changing how organized (and by implication how hard working) you are involves feelings: threats and fears. Students can start to feel very incompetent and inadequate when confronted with just how marvellously organized and efficient it is possible to be. Students seldom discuss the topic. There is often even a social pressure to give an outward appearance of incompetence. In the subculture of Halls of Residence it seems quite common for students to have to pretend to have done no work, or to have no idea when an essay is due in, even if this is not the case.

For these reasons I tend to run exercises on being organized which start off with an attempt to get feelings about organization and diligence out in the open, and discussed, before possible practical solutions are suggested. One quick and effective way of getting at such feelings is to draw up a check list of statements you believe people would make about themselves, if only they had the courage. For example I once included the statement: 'I bet everyone here is cleverer than me' in a checklist handed out to the entire group of freshers at a university during their induction week. Overtly they were all looking cool, calm and collected. Every single student agreed with the statement.

The Materials for this exercise consist of a checklist of statements about being organized. The main benefits from this exercise seem to be concerned with making discussion of this topic legitimate; socially acceptable. It helps participants to recognize that their feelings and problems are not unique. The transition, towards the end of the exercise, towards discussing how participants cope with or avoid all these
problems tends not to get very far. The notion that practical steps can be taken and that disorganization is not a wholly intractable problem, will come across. But little real progress is likely to be made about the details of practical steps and how to implement them. Further exercises, based around timetabling for example and backed up with contracts between students to try out particular ideas, are probably necessary for this. Chapter 3 discusses further how to back up exercises which, like this one, act as an initial stimulus to thinking, with more practical steps.

All the statements suggested with the Materials for this exercise are negative statements (e.g., ‘I think that others do more than me’). This is because people seem to find it easier to say negative than positive things about themselves, and so it helps them to start identifying with statements and so thinking about themselves. However this can have, cumulatively, a rather negative and depressing effect. If you are worried about this happening then try including more positive statements such as: ‘I get a real kick out of finishing things’ and ‘Deadlines give me a lot of energy to get down to things’.

As a final comment on this exercise, it is perhaps worth mentioning that its worst enemy is a character who attempts, with great enthusiasm, to persuade others that organization and planning are not a problem at all: ‘Provided you do . . . (and here the character describes his or her own pet organizational technique) you’ll be fine!’ This is not useful to those students who are having trouble. If the character happens to be the teacher running the session this is disastrous. Those who manage to run their lives like the Swiss railway system seem to be in a particularly poor position to be empathetic and helpful to those of us for whom getting work done is a perpetual and irresolvable problem.

Instructions

<table>
<thead>
<tr>
<th>Working alone (5 min.)</th>
<th>Working in pairs (10 min.)</th>
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<tbody>
<tr>
<td>‘Read down this list of statements ticking those you feel apply to you. Alter statements so that they apply to you better. Note down any reservations or differences you have.’</td>
<td>‘Turn to your neighbour to form a pair and compare how you have responded. Have you responded the same for the same reasons? When you have responded differently, why is this?’</td>
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<table>
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<tr>
<th>Working in fours (30 min.)</th>
<th>Working in plenary (15 min.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Form a group of four with another pair. Briefly see where you agree and differ. Taking one statement at a time, ask yourselves: “Does this matter?” If you think it does, are there ways in which anyone in your group of four copes with or overcomes this particular problem? If particularly interesting or important ideas emerge, note down what they are for the plenary.’</td>
<td>‘I’d like each group of four in turn to take one of the statements you thought was particularly important and to tell others what ideas emerged about it.’ Continue until issues or time run out.</td>
</tr>
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Materials

I don’t think I work as hard as I could.
I couldn’t tell you how many hours I put in last week.
I often seem to leave things like essays till the last minute.
I find it hard to get down to work.
I don’t seem to be able to stick at a task (like reading through a chapter) for very long.
I think that others do more than me.
I don’t find it easy to talk to others openly about how much work I’m doing.
I’m never quite sure what I’ve got to do next.
I sometimes take ages to ‘get going’.
I’m not sure whether I’m doing enough or not.
I tend to flit from one task to another.
I seem to work better in some places than others.
I work rather irregularly, putting lots of time one week and practically none the next.
I’m generally behind, sometimes several weeks behind schedule.
There is no way I could do all the work I’m expected to.
I’m not sure I always do the most important things first.
I’m not sure I’ll be able to keep going right to the end of this course.
I don’t have any sort of long-term plan for my work.
Exercise Three — Taking notes

Notes

This session uses the simple and useful device of asking students to undertake an actual learning task — in this case taking notes — and then just asking them to compare with other students how they did this. This enables differences between students to highlight the nature of the learning task — in this case some of the decisions about content and process which are involved in note taking and which might otherwise be taken for granted. Most inexperienced students, and even many experienced ones, are quite inarticulate about why they take notes in the way they do. The form of notes is often rooted more in habits taught at school than in any coherent rationale. Methods initially adopted to cope with copying information from the blackboard, which subsequently had to be rote-learned, are often carried over to other contexts where they are quite inappropriate.

Probably the most important thing to learn about taking notes is that it can serve a variety of functions in your learning. Different tasks make different demands, and different ends require different means. Let me illustrate what I mean by this.

First, specific tasks make different demands. Taking notes from a book makes different demands from taking notes from packaged learning materials (e.g., Open University Units) on the same topic. Books often require a good deal of structuring and summarizing in notes if their impart is to be encapsulated, whereas well-written packaged materials often do this structuring and summarizing for you, leaving note taking to perform other functions such as maintaining attention. Similarly, different lecturers make quite different demands on students. Some intend their lectures to be quite self-sufficient, and a student can get through the course without further reading provided comprehensive lecture notes are taken. Others intend their lectures to be no more than introductions to reading, and note taking may best perform the function of providing orienting instructions and precise referencing for this reading.

Second, different ends require different means. Students very often say that they take lecture notes in order to use them subsequently for revision or further work. But evidence suggests that students do not in fact look back at lecture notes as much as they would have you believe. One reason for this, I would suggest, is that their notes are not in a form which makes subsequent use very fruitful. The initial taking of the notes may have served the very useful function of maintaining attention for fifty minutes, but not met the end in mind. Also, students may say that they are taking lecture notes to help write an essay subsequently. But even a quick glance at their notes will show that there has been practically no consistent selection of information, let alone selection specifically for a known essay topic. If you want notes to help you achieve specific ends, then the notes have to be taken with those ends in mind. ‘General purpose’ notes may not help any specific ends to be met.

For these reasons it makes very little sense to talk about good and bad note taking in general. Understanding of the purpose of note taking can be most easily facilitated if the note taking is set in a real context with a clear learning task and a clear learning goal in mind. While it is possible to simulate particular tasks and goals it seems to be more effective to use ‘real’ contexts. For example, it is possible to give a mini-lecture from which you ask students to take notes — but half of them you ask to take notes for a subsequent multiple-choice question test on the factual content of the lecture, and half you ask to take notes for a subsequent group discussion of the issues raised by the lecture. Comparison of the sorts of notes the two sorts of tasks lead to could be used as the basis of an exercise. However, comparison of notes the students took from lectures on two different courses they are currently studying would be more likely to raise learning issues in a directly applicable and generalizable way. Once some basic distinctions about the purposes of notes have been made by your students you can go on and use these to examine note taking from different sources, in different contexts, and for different end results. But the nature of the distinctions may need to be rooted in your students’ experience of their current learning rather than in artificial exercises if they are to be of use to them in understanding their current learning.

There are problems which may arise for this exercise which revolve around the degree of similarity or difference between students’ notes. If your students have brought along with them notes from different lectures, different courses, or even different disciplines, there may be too many confusing variables to cope with. The demands of a civil engineering lecture may be so different from those of a philosophy lecture that in comparing their notes, students from these courses may merely decide that they have nothing in common and leave it at that. On the other hand, if students have all brought along notes from the very same lecture there may be too little variation to spark off controversy and thought about why the notes were taken in the way they were. This problem can be highlighted where lecturers have demanded that students note down whatever they write on the blackboard. Even at university this is depressingly common. This results in
practically no variation in notes at all and your students are left wonder­ing only if the lecturer's demand was sensible or not.

In either of these cases it may be helpful to have some specimen notes as a handout in order to highlight particular issues in note taking. The material for this exercise consists of sets of some social science notes. What the students who wrote them were trying to do, and what function such notes serve, either at the time they were taken or subsequently, can be left for discussion, or you can make your own tentative analysis as a model for how to go about thinking about note taking. A handout consisting of different notes taken from your students' own discipline, or even better from an actual learning task which all of them will have undertaken, would obviously work much better.

Ways of linking an exercise like this one into students' actual note taking behaviour are discussed in Chapter 3.

Finally, the task for pairs I have suggested here — of requiring each person to get to understand the other's notes sufficiently to be able to explain them to another pair when they combine into a four — is quite a useful one. It is particularly useful when you suspect students will take their own particular form of studying somewhat for granted and not really feel there is anything to be said about it. Another's lack of understanding and persistent questioning can get round this and draw out more than if the individuals were asked to explain their own notes.

Instructions

Working alone

This first stage involves students taking notes from some source — a lecture, book, film, tape-slide or audio cassette. This can simply involve the students' last lecture before coming to the exercise, a special note taking activity at the start of the exercise, or even, if this exercise is tacked on to the end of a normal lecture of your own, the students' notes from this lecture. The more recently the notes have been taken, the more vividly and completely will students be able to reconstruct how and why they were written.

Working in pairs

(In 10 min.)

In pairs, each of you in turn have a look at the other's notes and try to understand why they are written in the form they are. Which things are included and which left out, and why? What will they be used for? Ask the other person whatever questions you need in order to understand their notes. Spend about five minutes on each set of notes. At the next stage you will be asked to explain and justify your neighbour's notes to another pair.'

Working in fours

(20 min.)

'In fours, I'd like each of you in turn to try to explain your neighbour's notes to the other pair. Why are the other's notes different from your own? Do the others use their notes in the same way as you do? Find out! You are not allowed to describe your own notes unless your neighbour is unable to.'

Working in fours

(15 min.)

'Still in fours, can you see from your four sets of notes what makes them either "good" and useful notes or "poor" and useless notes? Can you form a list of those characteristics you have identified which you think are useful and those you think you should avoid? Elect a chairman to write down these characteristics so you have a list ready to report at the plenary. You have about fifteen minutes.'

Working in plenary

(15 min.)

'I'd like each group in turn to read out one item from its list. If what is read out is clear to the other groups and not contentious, then I'll write it up on the board under one of the two headings: "Good points about these notes" or "Bad points about these notes." If the points are unclear or contentious, I want others to clarify or object to them. I won't write anything up unless we can agree on it, and we are clear what it means.'

Continue until points are exhausted.
Is crime getting worse?  
(Do I believe the Daily Express?)

Firstly, you can't really say crime is getting worse, cos can't tell how much crime there is:

- official stats count odd things like who was found guilty, how many cases were 'cleared up' etc.
- lots of crime is undetected, unnoticed etc.

Classifications differ - e.g. definitions of homosexuality ≠ larceny. The police try less hard, the public care less.

- lots of things don't count as crime - e.g. students smashing up their college isn't the same as Chelsea fans smashing shops.  
- white collar crime is widespread but not detected (REPRO SUTHERLAND)

Secondly, even if you know how much crime, you don't know why:

- What is crime?
before you start, just suggest new "plans of action" to each other. How are you going to tackle it?"

Working alone 
(10 min.)

'OK, you are going to have to explain what you think the book is about to a different person after you've had ten minutes to work on it. Off you go.'

Working in pairs 
(10 min.)

'Form pairs with someone different. Taking it in turns, one of you explain to the other what you now believe the book to be about. How did you gain that understanding? Do you both understand the same thing? Did you both look at the same parts of the book?'

Working in fours 
(15 min.)

'Share your understanding of the book. What were the best ways (and the worst ways) of gaining that understanding? Did your initial one-minute scans affect the way you used the book? Elect a chairman who notes down good ideas about understanding the book quickly.'

Working in plenary 
(10 min.)

'Each group, in turn, explains one good way of getting to grips with the book in a short time. Did other groups use those methods?'

Continue till items are exhausted.

Materials
(for an exercise on the reading of short articles)

'Students' use and misuse of reading skills'
by William Perry*

Mr President, twenty years ago this Faculty undertook an experiment to see if some of its students could be taught to read better. Since the Faculty was then something of a pioneer in such an enterprise, it would seem appropriate that it should receive, after two decades, at least a report of progress — the more so because the work now concerns not the correction of disabilities of a few students but the direction of the abilities of a large proportion of the freshman class.

The students of this college are reputed to spend a good deal of time reading. In fact, a student sits with his books for nearly a thousand hours each year. The Faculty has a deep concern that these hours be fruitful. This concern is evident in the wording of assignments, in the layout of instruction in each course, and in the conversations of teachers with their students. It was this same concern that started the original experiment in reading improvement in 1938. The experiment began with a rather mechanical emphasis. It consisted of an instructor, whose main job was to run a projector for the first Harvard Reading Films, and some thirty student volunteers, hopefully the worst readers in the freshman class (and at that time there apparently were some freshmen who for Harvard's intents and purposes found it hard to read at all). The class met for about 18 to 20 sessions and engendered enough enthusiasm to become, like many an experiment, a kind of annual fixture, this one known as the Remedial Reading Course. Each year freshmen as they arrived in the fall would take a reading test and those who scored lowest would be informed of their plight and allowed to volunteer for the continued experiment.

When the Bureau of Study Counsel took over the actual instruction in this course in 1946, we met with thirty depressed-looking volunteers one evening in a basement class-room somewhere. Not knowing really what we were up against, we gave them still another reading test of a standard sort and discovered that every single one of them could score better on this test than 85% of the college freshmen in the country. We felt that to be useful to these people in their genuine dissatisfaction we were going to have to take a new look at the reading improvement game. We therefore abandoned the word 'Remedial' for the course and upgraded the material until it could jar the teeth of the average graduate student. Then we threw the doors open.

The amount of enthusiasm that exists in this community to read better — or if not better, then at least faster — is evidenced by the fact that we soon found ourselves with nearly 800 people enrolled in the course. When we examined the roll, we found that we had some 400 freshmen from Harvard and Radcliffe, 100 upperclassmen, 230 graduate students from the various schools, especially that of Business Administration and two professors — from the Law School.

Although the fees paid by these multitudes looked very attractive on the budget of a small office, we came to feel this was stretching our energies too far. We have subsequently cut the class in half and have been trying to make some sensible system of priorities whereby we might offer first chance on seats to roughly that third of the freshman class that might be most likely to benefit from this kind of instruction. In trying to find out who these people might be, we have turned up some observations about freshmen which may be of interest to the Faculty.

Exercise Four — Reading — using books

Notes

The sheer quantity of 'required' and 'recommended' and 'suggested' reading confronting most students must often seem to them rather overwhelming. In most courses it comfortably exceeds the quantity of new and unfamiliar material which one might reasonably expect them to be able to read thoroughly and assimilate. There is sometimes a realization of this difficulty by those recommending the reading when instructions take the form: 'You don't have to read all of this book, just have a look at it.' Unfortunately 'having a look at' a book is often something that inexperienced students do not have much familiarity with. It can come as a revelation that a book may contain only one or two central notions, and that most of the book consists of elaboration of, evidence for, and implications of, these notions. These basic notions might be contained within the blurb on the dust jacket, and it is often possible to get a fairly accurate idea of what a book is about in a few seconds. One of my students was so taken by the idea which arose in this exercise — that one can work through books usefully by reading only the first and last paragraphs of each chapter — that he promptly devoured five of his set books in one evening in this way!

This session is intended to explore the possibilities of using books in new ways.

Some students will be enormously resistant to the notion of not reading a whole book from cover to cover, carefully. They seem to feel that it does not do justice to the author or the ideas expressed if anything is missed out. They may even feel that it is not possible to understand the ideas properly unless the entire book is read. Even a demonstration of the effectiveness of very quickly skimming a book, and the recognition that others think it perfectly acceptable to use books in a cavalier manner, may not be enough to change such students' habits, so insecure do they feel if they miss anything out.

This exercise uses the device of getting students to do something which they might well not normally do. They might even balk at doing it, believing it to be impossible. In everyday studying there is very little incentive and a good deal of risk involved in trying out a completely new way of going about a learning task. In exercises such as these it is relatively safe, and so it can be very rewarding — and even exciting — to students to be asked to do something completely new. In this case students are asked to extract the guts from a book first in two minutes, and subsequently in another ten minutes. The first notions you have of what a book is about make an enormous difference to how you go about reading it, and what sense it makes to you. This exercise focuses on how these first notions are gained.

For Materials for this exercise I suggest you choose any reasonably structured book — a book which is recommended reading for a course your students are studying for example. It must be far too long to read in the time available but still have some reasonably coherent message which it is possible to extract. A book of readings, literature, or a scientific textbook would not be suitable.

However, I have offered some Material. This Material is not for the exercise for which I have given Instructions here, but for a similar one on reading short articles. It is easy to use much the same format for this as for the exercise I have described on using books. I would usually stop students unexpectedly after one or two minutes, after having initially told them they could have ten minutes, in order to identify their conventional way of starting to read, and to highlight the importance of the first impressions one gains for subsequent reading. The Material I have offered for this exercise is an article about exactly this reading issue, and would probably make interesting reading for you, even if you do not use it for your students.

Instructions

Choose as material any reasonably structured book — suggested further reading, for example, which is far too long to 'read' but has some reasonably coherent message (i.e., not a book of readings).

Working alone

(2 min.)

'Imagine you are about to attend a tutorial on this book. You only have two minutes to check out what it is about before the tutorial starts. Off you go!' (2 min.)

'OK, now write down what you think the book is about — as much as you have gathered in your two minutes. Don't "cheat" by looking back at the book.'

Working in pairs

(10 min.)

'Compare what you have written down, and compare how you found it. Do you think you've got to the heart of it? Don't "cheat".'

(2 min.)

'I'm going to give you another ten minutes, now, to make what you can of this book, but
only 150 even made a claim to have taken a look ahead during twenty minutes of struggle with the chapter. And the vast majority of these seemed to have looked ahead only to determine how long the assignment was.

We asked anyone who could do so to write a short statement about what the chapter was all about. The number who were able to tell us in terms that had something to do with the growth of institutions, was just one in a hundred-fifteen.

As a demonstration of obedient purposelessness in the reading of 99% of freshmen we found this impressive. We had been looking for the one-third of the class most in need of our beneficent instruction and we had found just about everybody. We tried to find out if the students had behaved this way simply because it was a test — they reported no, that they always worked this way. When we pointed the ending out to them, some said, 'You mean you can sometimes tell what a chapter is about by looking at the end' and others said, 'O Lord, how many times have I been told!'

Told or nor, after twelve years of reading homework assignments in school they had all settled into the habit of leaving the point of it all to someone else. We knew from our own efforts to teach independence of approach in reading that students find it hard to hear us even when the sheer bulk of college work could be handled in no other way. And we supposed that school-teachers had an even harder time of it. We were therefore prepared to find this widespread passivity of purpose; we wished to go beyond this and to identify those students whose misconceptions of reading involved something worse, a positive misconception of aim, a notion of the purpose of reading so at variance with the goals of Harvard that they might be especially slow at learning from their college experience. We had therefore added another turn to our test.

We asked students to imagine further that in their imaginary course an examination had been given on which an essay question was written by two students. The first of these was a chronological Harvard essay question: 'From 1066-1272, the Norman and Angevin Kings laid the foundations of English self-government both by their strengths and by their weaknesses.' Discuss. (Twenty minutes). We then presented them with two answers, purporting to have been written by two students. The first of these was a chronological reiteration of the chapter by a student with an extraordinary memory for dates and kings and no concern for the question (or for any intellectual issue at all, for that matter). We calculated that no instructor with a shred of compassion in him could give this answer less than a C— even though it might deserve less. The second essay answer, shorter, and with hardly a date in it, addressed itself stringently to the issues posed by the question. We supposed this answer to be worth a B+, or perhaps an A— to a relieved instructor.

In validating the test, we had then begged the assistance of the chief section man in a real course, not wholly unlike this imaginary course of ours, and asked him to grade the essays. Of the first, he said that he really couldn’t give the student a D because he had worked so hard; of the second we were pleased to hear him say that this was obviously an A student, even though all he was going to get on this essay was a B+.

To the freshmen, then, we presented on the test these two answers without reporting their value and asked them to state which of the essays was the better, which the worse, and to give their reasons. We are happy to say that on this they did quite well. Only two hundred students graded the better essay the worse, and only two hundred more gave the wrong reasons for the correct grading. This means that, on this particular measure, only a rough third of our freshmen showed themselves to be headed toward the wrong goals. Very possibly, were this same test to be given later in the year, the percentage would be much less. But we have experience to support that the tendency persists—often tragically.

These then were the students to whom we turned our attention. Until such students revise their sense of the purpose of reading, an increase in effort is likely to produce only worse results. Oddly, we have as yet found nothing else to distinguish them from other people. The number of them who come from public schools as against private schools is exactly the same as for the class as a whole, and they are by no means the least intelligent members of their class. We are eager to find if we can learn more about how they get their misconceptions. We hope that the Reading Course may help to turn some of them around. Perhaps the test itself helped; the section man who helped us with the test was quick to point out its instructional possibilities, and we gave the text and essays to the students to take with them, together with a page of comments. It was encouraging to have to thread one’s way afterwards through knots of students working over their papers.

What might the faculty conclude from all this? As the faculty’s agent in this area, I can report my own conclusions from this twenty-year experiment.

1. It appears that most students can learn to read better.
2. The instruction that assists them to do so does not center in the mechanics of reading. The mechanics of reading skill are inseparable at this level from the individual’s purpose as he reads. If you train someone in mechanics alone, he drops right back into his old habits the minute he picks up an assigned text.
3. The possession of excellent reading skills as evidenced on conventional reading tests is no guarantee that a student knows how to read long assignments meaningfully. The fact that the Admissions Committee is providing students to higher and higher ability should not lull the Faculty into feeling that at last it does not have to teach students how to study. In fact the responsibility is
One wonders first of all why students who read on tests, as well as these do, want to attend a reading course at all, much less one that meets daily at 8 o’clock in the morning. Of course a number come in hope of magic — some machine they’ve heard of that will stretch their eyes until they can see a whole page at a glance. This is understandable. Freshmen are deprived rather abruptly of the luxury of thinking that reading is something they can finish, and are confronted instead with an infinite world of books in which they see that they may forever feel behind, or even illiterate.

But year by year it has become more apparent that what the students lack is not mechanical skills but flexibility and purpose in the use of them — the capacity to adjust themselves to a variety of reading materials and purposes that exist on a college level.

What they seem to do with almost any kind of reading is to open the book and read from word to word, having in advance abandoned all responsibility in regard to the purpose of the reading to those who hire made the assignment. They complain consequently of difficulty in concentrating and feel that they have ‘read’ what assignments but are unable to remember anything in them. We have therefore shifted the emphasis of the reading course away from mechanics over to an effort to shake students loose from this conscientious but meaningless approach to their work. We have found that if they can be persuaded of their right to think, even though reading, they can then develop a broader and more flexible attack on the different forms of study and put their skills to meaningful use even on long assignments.

In offering freshmen priority on seats in the course, therefore, we have naturally wanted to know about their flexibility and their sense of purpose in reading. This is a hard thing to measure. To make some estimate of it we designed a new kind of reading test — as reading tests go it may really be rather peculiar — and presented it to the freshmen of Harvard and Radcliffe when they arrived this September. We suspected the students might learn more from it than we would, but this seemed a legitimate chance to take. I should like to describe this test and to tell you what the students did with it.

First of all, instead of the usual short passages which appear on reading tests, we presented students with thirty pages of detailed material — a complete chapter from a history book. We asked them to imagine that they were enrolled in a course on the Growth of Western Institutions. We asked them to picture themselves sitting down at the end of a reading course entitled ‘The Development of the English State, 1066–1272’. They were to suppose that they had two hours ahead of them for this work, but that after all, they still had their French to do and some Chemistry to review if they had time left. At the same time, they were to imagine that in this course an hour-examination would be given in about a week on which they would be asked to write a short essay and to ‘identify’ important details. We told them to go ahead about their reading in whatever way they thought best and to take notes if they wished. We told them this was a test of what they derived from the early stages of their study of regular assignments and that in about 20 minutes or so we would stop them and ask them questions appropriate to their particular method of work. We then turned them loose.

Twenty-two minutes later we stopped them and asked them what they had been doing. If they reported that they had been reading from the very beginning and going straight ahead into the chapter whether rapidly the first reading, or carefully with a more rapid review in mind — we gave them regular multiple-choice questions on the chapter as far as they had gone in it. Up to this point the test was fairly standard, and we can report that the vast majority of the students, over ninety per cent of them in fact, reported that this was exactly what they had done. We can report that their rate of work in this particular approach was astonishing and their capacity to answer multiple-choice questions on detail was impressive. Some of them had read as many as twenty pages of very detailed material and were able to answer accurately every sensible question we could ask them about the detail.

The freshman class — as far as we could see — of both Harvard and Radcliffe, consisted of a most remarkable collection of readers -— in the broadest and most flexible sense of the term. The showing is most remarkable because, of course, these ninety per cent of the class were going at this test in the hardest way imaginable.

Let me explain what I mean. The chapter in question is an admirable piece of exposition, but like many admirable chapters it makes no initial statement of its aims, and it takes a little while to get going.

And as a consequence, the reader who begins at the beginning with the Battle of Hastings and reads word by word is likely to find himself at page three hopelessly bogged down in the shires, the hundreds and the marches of Anglo-Saxon England. And after ten minutes or so, this was just where the students reported themselves to be. What we were interested to determine was how many students in the face of this burden of detail, the purpose of which was not clear, would have the moral courage — or should we call it the immoral courage — to pull themselves out and look at the ending of the chapter. Or even to survey the entire marginal gloss set out like a sign posts page by page. The very ending has a bold flag out beside it which says — ‘Recapitulation’. As a summary paragraph we doubt that we have ever seen a better one. From a half minute of study of this paragraph the whole development of the chapter becomes immediately clear to a reader and puts him in a strong position, not only to select among details as he reads them, but also to remember, for their meaningfulness, the details he would need to support an intelligent discourse.

Out of these 1500 of the finest freshmen readers in the country
Exercise Five — Writing

Notes

In the original booklet on which this volume is based I devoted four exercises to different aspects of writing. It is when students are being active and constructive in their learning, and especially when they are writing, that their purposes and their conception of learning and of the whole intellectual enterprise they are involved in, become most apparent. Because of this it is through writing exercises that I find that I can have most impact in helping students to reconceptualize their learning and to reorient them towards new learning goals. The exercise I have chosen to give full Instructions and Materials for here is explicitly concerned with what writing is for and is called 'The writer's intention'. I have also included brief notes, but no Instructions or Materials, for three other exercises on writing which are concerned more with the mechanics of communication skills than with the purposes of studying.

A. The writer's intention

Students understand what essays are for in very different ways. They are trying to achieve very different sorts of things when they set out to write essays. They have different intentions when they write. This is a very hard notion to explain to students in the abstract, but very easy if concrete examples can be given to illustrate what sort of written outcomes result from different intentions. It is possible to carefully choose pairs of students' essays to illustrate the particular difference of intention you are most concerned with — or even to write your own.

The pair of short essays offered here as Material have been written in strikingly different ways. Although the students who wrote them both attempted to answer the same question their essays embody quite different notions of the nature of the task of essay writing. Two sorts of somewhat distinct factors may be involved in these different notions. First there may be differences in the conceptions of learning in general which underlie these students' intentions. I am referring here to the sorts of differences in conception discussed in Chapter 5. These sorts of differences would tend to lead to these students tackling all essays, whatever the context, in a similar way. Second there may be differences in the way these students understood the specific assessment requirements of the course they were studying. Wherever this pair of essays has been used with a group of academics it has led to disagreements amongst academics about which is best because they disagree about what assessment systems should be assessing. Both of these sorts of issues: about the goals of learning and about the criteria of assessment; are raised by this exercise. Because the variety of issues raised can be so broad it may be helpful, if the size of your student group permits it, to lead the pooling of points on the plenary into a general discussion of the purpose of essay writing. I tend to try to emphasize issues to do with students conceptions of the goals of learning, as the next exercise also raises issues about assessment.

Instructions

Working alone
(20 min.)

Working in pairs
(10 min.)

Working in fours
(15 min.)

Working in plenary
(15 min.)

'Read through these two students' answers to this question. Which answer is best, and why? In what ways do they differ?'

'Compare your comments. Which answer is best, and why?'

'Pool your conclusions. Were these students trying to do the same thing? Describe what you think each was trying to do.'

'I'd like each group in turn to make a comment about one of the answers, and about what the student was aiming to do.'

Lead into a general discussion.
only the greater, for these students have the ability to muddle through assignments the wrong way and still get that wretched C–.

4. There can be no general rules for teaching the exercise of judgement in reading. Such judgement requires courage, and courage cannot be taught by rule; it can only be dared, or redirected, in ways appropriate to particular subjects and learning tasks. To be sure, the reading of conflicting authorities is a fertile ground for young courage, and an excellent exercise in reading skill. And a C– for the attainment of useless knowledge is perhaps less of a kindness in the long run than congratulations for effort and a clean E for expending it in the wrong game. However, the individual instructor in his own course remains the best judge of how to set up his assignments so that they demand a redirection of effort toward effort and away from ritual.

5. A short separate course of general instruction, like the Reading Class can be of some contributing value, if only because it offers a moment’s freedom to experiment without the threat of failure. But its limits are very clear. In such a course we can only dramatize the issues, and this only in the area of very general expository reading. We can refer only briefly to science and must leave literature explicitly alone.

We feel, too, that only a narrow line of spirit divides such instruction from an invitation to mere gamesmanship. We sometimes worry, in teaching method without content, lest students gather that we recommend a glance at the ending of chapters and at nothing else. (We do dare students to suppose that even this is sometimes appropriate.)

I should like to be able to report, in conclusion, that when we do succeed in introducing students to the rigors of thoughtful reading they are invariably grateful. I must confess, a bit ruefully, that this is not always the case. I have here a description of this kind of instruction in a student’s words. To assist us in developing the course we have occasionally given the students a questionnaire at the end, and this one of a year or so ago was a real up-to-date Social-Science-type, questionnaire: open ended at the beginning, pointed at the end, and all. It says here, “What did you expect when you came to this course?” Big space. “What do you think about it now?” Big space. On the other side a lot of specific questions. We did not ask students to sign their names, only to enter the scores they made at the beginning and end of the course.

This student’s scores when he came to the course showed him to have derived only a D– kind of understanding from considerable study of the material. At the end he was obtaining a straight A understanding in one-third of the time. I remember settling back with this one in anticipation of those comments that a teacher so loves to hear — but not at all. He was furious. ‘What did you expect when you
B. What makes for a good read?

One aspect of essay, report, and examination writing which distinguishes them from other forms of writing is that they are formally assessed. As a consequence it is common for students to leave all the evaluation up to the marker and to abandon all responsibility for its quality. It is very common for students not to read their work at all after it has been completed. They often do not realize that they have many perfectly valid criteria for judging their own (and their colleagues') writing. It is through developing these criteria and bringing them to bear on their own writing that they can alter and improve their own work.

This is not to say that all their criteria are appropriate. Students often imagine that it is the degree of sophistication of an essay — in terms of its liberal use of terminology, complex and tortuous phraseology and 'journalese' in general, copied factual information and so on — which determines the grade it will receive. In fact, of course, one's response when reading is heavily swayed by mere 'readability'. A clear simply expressed piece is generally better received than a piece whose structure is so complex the ideas cannot be recognized however good they may be. Students' misunderstanding of the nature and importance of originality in essays is another problem.

The purpose of this exercise is to draw out students' own criteria for judging writing by getting them to mark an essay and to write comments on it; students then compare their marks and comments and by discussion in groups try to arrive at some general criteria which they are jointly using to judge the essay. At the plenary these criteria are pooled and displayed on a board for discussion.

By and large the idiosyncratic and misconceived criteria drop out as students combine into larger groups and attempt to reach consensus, and the final pooled lists of criteria look very similar to those of academics marking the same essay. Usually students give an essay a lower mark than academics and are not so forgiving and able to recognize strengths. By this process students should gain some confidence that they do have valid criteria which they can then apply to their own writing.

There are also several subsidiary outcomes from such a group essay marking exercise, any one of which could be emphasized in instructions or the final plenary if it was felt to be particularly important.

First, students get a first-hand experience of what it is like for their teachers to mark essays. The tedium and annoyance that a blatantly cribbed hack piece of work in terrible handwriting can induce can readily be induced in students too!

Second, it can improve students' use of teachers' feedback. After they have attempted to make comments on the essay, you can ask them to imagine that the essay is in fact their own and that they have just got it back from their tutor. How do they feel about the comments? What are they going to do about them? Generally, of course, students are appalled at the comments they themselves have written and start to gain a better appreciation of the difficulties involved in giving useful feedback, and of some of the intentions behind comments. Students have sometimes said they will take much more notice of their tutor's comments after this exercise.

Third, students can be encouraged to take more responsibility in their own learning by this sort of evaluation exercise. It is one of Carl Rogers' (1969) fundamental principles of learning that independence is facilitated when self-evaluation is basic and evaluation by others is of secondary importance. The development of students' confidence in their own evaluative criteria engendered by this exercise can be followed up by requiring students to mark and comment on all their own written work before it is submitted for formal assessment.

The choice of Material for this exercise is crucial. Teachers have a tendency to choose superb essays as examples for exercises. Very often such essays can be so different from students' own moderate efforts, and seem so far beyond their ability, that little of value is learnt. Instead it seems to help to use an ordinary essay which is perhaps patchy in quality with both good and poor characteristics. Also if the handwriting and style of expression are too impenetrable and the ideas expressed too obscure, then too little will be available for comment and discussion. It may be worth showing an utterly cryptic essay as an example, but not as the material for a marking exercise. It is also important that the essay is written about subject matter which is familiar to the students and about which they care. An obvious source is one of the student's own recent essays, perhaps with the name, or even the handwriting, removed to maintain anonymity.

C. Explaining in writing: a sense of audience

Mere egocentricity is enough to make many people's explanations opaque. But, in addition, writing an essay on a subject about which your only reader knows a great deal more than you is a very odd task. Because students are aware of their tutor's mastery of the subject matter, it is quite common for them to assume that their reader has no needs at all — that, however they write, they will be understandable. This lack of recognition of tutors' needs as readers can lend to incom-
Answer 1

The sound limit at Kennedy airport, New York, is 112 PNdB*, and at Heathrow, London, 110 PNdB. The manufacturers of Concorde (Sud-Aviation and the British Aircraft Corporation) have promised that Concorde will range between 104 and 108 PNdB, depending on its weight at take-off.

At the start of Concorde operations at Heathrow, 21 of the first 35 departures exceeded 110 PNdB, and in the first eight months of operations 72% of the 97 departures exceeded 110 PNdB. Overall in 1976 there were 109 infringements of Heathrow’s limit by Concorde. These measurements of Concorde were about 7 PNdB lower than during its early endurance trials. At the same time there were 1,941 infringements by subsonic jets. Concorde rarely features in the list of the ten noisiest take-off’s each month at Heathrow, and subsonic aircraft at Kennedy have been recorded at 121 PNdB — twice the limit.

At Dulles Airport, Washington, Concorde has averaged 119.9 PNdB at take-off and 117.8 PNdB on landing. This is 12–13 PNdB higher than the averages for subsonic aircraft. The noise levels have been going down, and with them, the number of complaints. In September 1976 the average level was 121.3 PNdB and there were 186 complaints (29 of these to one take-off). In October the average was 117.4 PNdB and there were 101 complaints. During this time polls of opinion concerning Concorde’s trial period at Dulles showed an initial opposition of 36.9% drop to 26.2%. In New York, opposition to Concorde landing at Kennedy has dropped from 63% in January 1976 to 53% in April 1977.

While 500,000 people are affected by aircraft noise in Washington, 2,000,000 are affected at Kennedy. It has been estimated that 400,000 extra people will be affected by noise if 80 Concordes serve 12 US cities. This represents a 1% increase. Bumps in the runway at Kennedy force Concorde to take off closer to heavily populated areas, but due to advanced flight control characteristics Concorde can begin to bank at an altitude of 100 ft. compared with an average of 480 ft. for subsonic aircraft, and so can turn away from heavily populated areas sooner after take-off.

*PNdB means Perceived Noise Decibels — a logarithmic scale of noise

Answer 2

Opposition to Concorde based on arguments concerning noise pollution takes two main themes. The first is concerned with the ‘sonic boom’ — a phenomenon of supersonic flight unique to Concorde amongst commercial aircraft. The second is concerned with noise levels around airports caused during take-off and landing. This second theme is common to all aircraft, and the issue at stake is whether Concorde is significantly noisier than subsonic aircraft.

Comparisons with other aircraft are complicated by the changing nature of jet fleets. Early jet aircraft (eg. the DC8 and 707) used turbo-jet engines, and whilst these have been quietened, they are much noisier than second-generation fan-jet engined aircraft (eg. DC10 and jumbo 747). Eventually these older aircraft will be phased out, but at the moment Concorde is being compared with them.

There are also problems of measurement. Objective measures (meters giving a reading in decibels) cannot give any impression of ‘shrillness’ or subjectively experienced nuisance. An aircraft giving higher decibel readings may not be experienced as ‘noisier’ by someone hearing it take off. Subjective measures also involve problems, as ‘noise’ is such a multi-faceted phenomenon, and different people use different criteria in assessing it. There are dangers, also, in questionnaire surveys of reactions of people living around airports. Average ratings of ‘nuisance’ change over time without any changes in objectively measured decibel levels or frequency of aircraft movements and so other factors must be involved. These factors can be political. Boeing took care to subcontract for parts for its SST at factories surrounding Kennedy airport, so that votes concerning whether SST’s should be allowed to use the airport would be influenced by residents concerns for their jobs! Workers at Filton and Toulouse would hardly try to ban Concorde landing near their homes, however noisy it is!

Finally, there is a variation in recorded noise levels dependent on the skill of the pilot, and load factors of the aircraft. Subsonic aircraft have been measured at twice the legal noise level, struggling to take off with heavy loads in adverse conditions. Concorde has been flying under-loaded, with skilled pilots, who have even been reported banking away from noise monitors.

Given this variety of problems, it would seem likely that Concorde causes even more noise pollution than data suggests, and that in comparison with subsonic jets will become comparatively worse as time goes on.
Exercise Six — Taking examinations

Notes

Examinations are such an emotionally-charged subject for most students that almost any opportunity to discuss them can lead to a great reduction in anxiety. A structured discussion in which students simply share the revision techniques they have found most useful in the past can work well, especially if the most promising techniques can be explored more fully at the end of the discussion. This might involve: students noting down their own favourite techniques for five minutes; sharing these in pairs for fifteen minutes; pooling the best in fours for twenty minutes; and then having twenty minutes to explore the implications of one or two of these techniques.

The exercise offered here is aimed at what is involved in actually sitting the examination itself. It gives students the chance to think about how to plan their time and tackle the examination paper sensibly while not under stress or time pressure. As material you will need a past examination paper, complete with any examination instructions, for a course your students are studying. If you have students from different courses, make sure that each group of four at the least, is working from the same examination paper.

The timings for this exercise are very tight. It would benefit from considerably longer, especially as exercises on examinations seem to have a cathartic effect and raise all sorts of powerful issues for students other than those strictly connected with taking examinations. It may take some guidance from you at the plenary, or even an additional exercise, to make the link between examination tactics and revision tactics.

Such a large part of examination performance is nothing to do with what students understand about subject matter that it is possible to run an exercise solely around these extraneous factors. If you have examiners' reports which identify what went wrong last year you can ask students to guess what the report commented on — what students did wrong that results in poor marks. Once their guesses have been pooled at a plenary you can hand out the examiner's report or a list of your own. My own 'general-purpose' list is included here as Materials. The important point about this list is that it is so obvious and apparently trivial that simply given as advice as what not to do it is likely to be ignored.

Instructions

Working alone (5 min.)

'Imagine you are in the examination room, and you are given this exam paper and told to begin. Go ahead, for ten minutes, exactly as if you were really doing the exam.'

Working in pairs (5 min.)

'Compare what you did with your ten minutes—was it different? Why?'

Working in fours (10 min.)

'Pool the tactics you adopted. What are the most useful things to do in the first ten minutes? What things are best avoided?'

Working alone (10 min.)

'Now go back and start tackling a question which isn't your best question (choose your 2nd or 3rd best) and start working on it. You have ten minutes to work on it. Don't try and finish your answer in ten minutes, just use it as the first ten minutes you'd spend on this answer.'

Working in pairs (5 min.)

'Compare how you went about starting to answer your chosen question.'

Working in fours (15 min.)

'Pool your tactics. What methods of revision would be best suited to the tactics you would choose to adopt?'

Working in plenary (10 min.)

'I'd like each group in turn to describe a promising way of tackling the paper, and going about answering a question; and to suggest what form of revision would be the best sort of preparation for that way.'

Materials

(These materials are not for the exercise for which there are instructions, but for an additional exercise discussed in the Notes.)

Things which students do which result in them doing badly in examinations:
prehensiably written assignments in which assumptions the student has made about the reader’s ability to understand statements and arguments are ill-founded.

The purpose of this session is to make some of these kinds of assumption explicit in a very simple task — that of giving written instructions. Suppose I were to ask a student to give me instructions how to reach the nearest bus stop from the room we were working in. His instructions might involve many assumptions about how well I knew the building I was in, and the surrounding streets — and even that I knew left from right! And because of the simple practical nature of the task, these assumptions would soon become apparent, especially if the student compared his instructions with those of other students, who would inevitably have made different assumptions. Other needs I might have in following these instructions may become clear too. If the logical steps in the instructions were too big, I might get lost. If they were too small I might get bored. I may want to check that, so far, I am still right. ('At this point you should be looking at the entrance'). It may be very useful to have an overall orienting instruction ('The bus stop is in the direction of the window') or some idea of the plan of the instructions so that I can use just those bits I need ('If you know how to get to the front entrance, skip to instruction No. 10'). It is relatively simple to then translate the lessons learnt into terms applicable to writing reports and explaining arguments in essays.

This exercise simply involves asking students working alone to write some instructions or directions, and then allowing them to compare and combine their instructions in pairs and then in fours, employing only the best devices at each stage. The plenary is used to identify the characteristics of these effective devices and to discuss their relevance to essay and report writing.

D. Writing — being flexible

There are many useful exercises which can be undertaken around the sheer mechanics of writing — the simple blocks which prevent us from writing more quickly, fluently and clearly. One such block is to do with our reluctance to abandon unpromising forms of explanation or description that we have adopted. If you observe someone writing it is likely that you will see their pen hovering hesitantly over the page for very much longer periods of time than you see it busily writing. One reason for this seems to be that we write ourselves into corners and then have a lot of trouble getting out of them. Many is the time I have written a paragraph, or even merely a first sentence, and it has led me into a cul-de-sac. I have struggled with difficult arguments or phrasings for ages in an attempt to get back into the line I had originally intended. All I in fact needed to do was abandon my sentence, or paragraph or unpromising approach and start again, but it terribly difficult to do that. It seems a waste of effort, or it never even occurs to me to start again. It is very easy for me to imagine the way I am tackling my writing is the only way. And it is perhaps even harder for an inexperienced writer facing a new task to see that there is more than one way of perceiving the subject let alone more than one way of writing about it.

This is an exercise in flexibility — approaching a piece of writing in a number of different ways in an attempt to break the rigidity and narrowness which can make writing so slow and painful. It simply involves asking students to write briefly about something with which they are familiar — an article they have just read or a lecture they have just attended. You can ask them to write only the introductory paragraph which will contain a summary of how the whole piece will go. After ten minutes stop them and tell them to start again, taking a completely different approach. Students may well protest but reassure them this is possible! Then allow students to compare their writing with each other so that they can see the enormous variety of approaches that could have been taken. Finally ask students to write one more paragraph, using some of the ideas which they have seen but which is different from the first two they wrote. This is doing little more than giving them practice at being flexible, but the experience of being able to take different approaches can really help to loosen up students' writing habits.
and then to ask very specific questions about this experience. The exercise: 'Taking notes' does this, and it is a simple and reliable device which requires little of you, the teacher, to employ.

Variations on this device can be used to highlight particular aspects of the learning task. The exercise: 'Reading — using books' involves students undertaking a learning task they might not have undertaken before, let alone examined in detail, and so provides a novel experience. The other reading exercise suggested involves interrupting a learning task unexpectedly at a particular point — in this case very early on — in order to examine the importance of the first steps that are taken as a part of the task. The writing exercise 'Being flexible' gives students practice at going about a novel task repeatedly as a basis for discussion. The exercise described on tackling examinations simulates the learning activity — students are not asked to sit a real examination. But all these are simply variations on providing immediate experience as a basis for discussion.

A good reason for basing discussion in immediate experience is that if you ask students to discuss some aspect of their learning — their note taking, for example — in general, then the outcome tends to be somewhat vacuous generalities. If students' past experience is to be used as the content of the structured discussion, then it helps to limit the degree of generality by asking about very specific experiences. For example, the first exercise: 'How do we learn best?' does not ask students to generalize about how they think they learn best, but asks them to first recall and describe two specific experiences (one good, one bad), asks questions about these specific experiences, and attempts to base all discussion on these specific experiences.

Unless learning activities undertaken more than twenty-four hours before involved particularly powerful emotional experiences, it can sometimes be quite difficult to gain accurate and detailed access to the process of that learning activity without using various recall devices — ways of helping students to remember more. Video or audio recordings of tutorials, and even of lectures, can provide a very powerful and effective recall cue. When accompanied by non-directive questioning, as with the 'enquirer role' of Kagan's interpersonal process recall method (Kagan, 1975) it is possible to gain access to feelings and insights not otherwise available for analysis. However, sophisticated recall devices are not necessary for most purposes, and something as simple as a student's own set of lecture notes can be used to 're-create' the lecture.

Gaining access to students feelings about their studying can be quite difficult. The device used in the exercise: 'Organising yourself' of providing a checklist of feelings and personal statements can be effective in cueing students' own feelings and making expression of them easier. Questionnaires, checklists of statements, and even vignettes of caricatured students can all work well to help students to articulate otherwise inarticulate and incoherent thoughts and feelings about their studying. Even study habits inventories designed to help teachers to diagnose students' study weaknesses (an activity criticized in Chapter 4) can be useful as tools of self-diagnosis, and to help students to conceptualize their own study methods.

For two of the exercises on writing ('The writer's intention' and 'What makes for a good read?') the content of students' discussion is not their own studying but their criteria for evaluating learning outcomes. The initial tasks require students to judge the quality of essays written by others. Using the outcomes of study activities produced by a third party can help to limit the inevitable post hoc rationalization of habitual and thoughtless forms of studying into which students can relapse when trying to analyse their own outcomes. It is possible to use a third party's essays, notes, laboratory reports, examination answers, and even personal accounts of tutorials or other learning activities, and ask students to evaluate them, in order to provide an input to a structured discussion. It is possible to focus such evaluation by providing some contextual information. For example: 'This student has described his study methods.' — and to hand out a description written by yourself to highlight certain sorts of characteristic and unproductive tutorial behaviour.

**Manipulating the structure**

The basic structure of the exercises in Chapter 2 involves students working alone for a short time, working in pairs for a bit longer, working in fours for the longest period of time, and then pooling some conclusions and gaining an overview in a relatively short plenary. The rationale for this structure is discussed in Chapter 7. While there are some good reasons for keeping to this basic structure, there is plenty of scope for varying it to suit your needs.

The simplest form of variation is in the amount of time allocated to the different stages. Reacting to a checklist or a set of notes with which a student is already familiar may take only a couple of minutes, whereas marking an essay may take twenty. It is important not to rush
• Turning up late and flustered — and so losing time.

• Not following the examination paper instructions about which and how many questions to answer and so answering questions which do not count and missing out questions which do count.

• Budgeting time between questions so badly that not enough questions are answered (e.g., three instead of four, throwing away twenty-five per cent).

• Misreading or misunderstanding questions through spending too little time deciding what is being asked for — and so answering a question which has not been asked.

• Reading whatever the question (whether 'Discuss . . .' 'Compare and contrast . . .' 'Evaluate . . .' or whatever) as: 'List whatever you can think of about this topic in whichever order you can think of it. Make no attempt to organize your answer. Include only unconnected facts.

• Writing illegibly. This is very common. The more slowly an examiner is forced to read, by poor handwriting, the less chance there is that he or she can work out what an answer is saying.

• Using opinions and personal experience as a substitute for well-supported arguments. Abandoning all logic and intellectual rigour.

• Believing that sheer quantity will gain marks. In fact, the reverse can be the case — good points and arguments being lost in a welter of irrelevant detail.

• Forgetting that the first 50% of marks for an answer are relatively easy to obtain, the next 25% extremely difficult and the last 25% quite impossible — and so wasting time elaborating on already good or adequate answers instead of improving poor and inadequate answers.

• Trying to remember what they know about a topic, select what is relevant to a question, organize it into an answer and formulate sentences to express that answer all at the same time instead of in separate stages — and so producing partly irrelevant, disorganized, incomplete and incoherent answers.

• Failing to read through finished answers for grossly incoherent and incorrect passages.

• Panicking.

This is, of course, a partial list and you may wish to delete and add items to suit your own subject discipline and experience.

CHAPTER 3
Going beyond the exercises

This chapter is concerned with practical issues involved in going beyond the six exercises in Chapter 2. It contains three sections: 'Designing your own exercises'; 'Putting your own course together' and 'Limits to the approach'.

Designing your own exercises

People find it relatively easy to modify the exercises in Chapter 2, or to design their own, to meet their own particular needs. They all use the simple device of Andrew Northedge's structured discussion technique (1975, see also Chapter 7) to examine aspects of students' approaches to learning, and it requires no special expertise to employ this device in new ways. However, the six exercises in Chapter 2 were carefully chosen to illustrate different ways of using this discussion device and it may be useful here if I briefly identify and discuss these different ways.

Generating content

The most important variation is in the way the content of the structured discussion is generated. If you simply ask students to discuss how they go about their studying, they rarely have much to say. You need to use various devices to help them gain access to the processes, decisions, purposes and so on that make up studying. One of the best ways of doing this is to provide an immediate experience of studying
rooted and inflexible, and their conceptions of learning rigid and unquestioned. A one-hour exercise, however brilliantly conceived and executed, is unlikely to bring about immediate and radical changes by itself. The cumulative force of several exercises can, by repeatedly questioning the purpose and process of students' learning, make change much more likely. Students can come to see that it is not just their note taking technique which embodies particular purposes, but that a recognizable approach to learning runs throughout their reading and essay writing as well. Each exercise builds on students' overall awareness of their studying and reinforces new and difficult-to-grasp ideas. A regular period of time put aside to examine studying can help self-reflectiveness and self-evaluation become a habit. Students can become self-improving.

Interspersing these exercises with periods of normal everyday study, by running them once a week during term time, for example, brings with it extra advantages. A danger with intensive study methods courses, especially those run out of term-time, is that the lessons learnt are not so easily transferable to everyday studying. It can help this transfer enormously if students do some everyday studying between individual exercises. This helps in two ways. First, it can provide a more immediate and realistic basis for students' discussion of learning experiences during the exercises. For example, if you have planned to run an exercise on learning from discussion next week, then you can ask your students to stop immediately after any tutorial, seminar or formal discussion group and jot down some notes about what was good and bad about it, what role they personally played in its success and failure, and so on. Students then turn up to next week's exercise with a more comprehensive basis for discussion than had the exercise occurred in the middle of a day devoted exclusively to these exercises.

Second, and more importantly, it can provide an immediate opportunity to try out some of the ideas that have emerged in an exercise in order to see what the consequences are for learning. For example, suppose that a student were to discover, in an exercise on note taking, that several colleagues took few or no notes from a particular lecturer while he himself took copious notes. At the same time the colleagues said they were trying to 'get a feel for the ideas' while he himself was trying to 'get down as much as possible'. An obvious activity for this student to try would be to listen to this particular lecturer without taking notes in order to see if he got something different out of it from when conscientiously scribbling. However, even though the idea to undertake this activity might have come from the student himself and even though it would have considerable face validity because colleagues already did it, it is still not all that likely that the student would try it out and risk missing an entire set of lecture notes. What is required is some extra impetus, some extra practical arrangement, which will make such risk-taking experimental activity safe enough and worthwhile enough to undertake.

One way study counsellors have gone about tackling this problem is to arrange 'contracts' with students. This involves the student coming to an agreement with the counsellor about some practical change the student promises to bring about, or new activity the student promises to try out, before meeting the counsellor again to report back on how things turned out. The most articulate proponent of this way of actually getting students to change their study habits, rather than to be simply aware that alternatives exist, is Goldman, of the University of Reading (cf Goldman 1979).

However this sort of contract seems somewhat one-sided. The counsellor is not promising to do anything difficult, and it is largely only the student's dependence on and submission to the counsellor's authority that makes this sort of contract stick at all. Only a relatively insecure student lacking in self-confidence and self-direction is likely to undertake many such one-sided contracts. It is also a very time-consuming business, requiring the counsellor to formulate contracts on a one-to-one basis and to check on the fulfilment of these contracts on a one-to-one basis as well.

Less one-sided, more economical of teachers' time, and more in keeping with the student-centred approach taken here, stressing students' independence and personal responsibility, is to encourage students to make contracts with each other, the outcome of which will be used as the basis of the next exercise, the following week. What the nature of the contract is, whether the students fulfil this, and so whether students bring anything with them to the next exercise is known only to the students themselves, their contractual partners, and the sub-group of four they work with the following week. The pressure not to let your pair group and colleagues down after having made an arrangement with them, is usually sufficient to encourage quite bold experimentation.

Let me illustrate how this might work with the student I hypothesized earlier who took comprehensive notes from a particular lecturer while his colleagues did not. Possibly after various suggestions, this student could form a contract with another to reverse roles for the next lecture in this series. The 'listener' would take comprehensive notes — to see what it was like to do so, and to make sure a set of notes was available if needed — and the compulsive note taker would listen, to see what it was like. They would have contracted to discuss the experience after the lecture and to see what they thought of the notes.
the first stage as the quality of subsequent discussion depends heavily on how deeply students get involved in the initial task. The time needed for discussion in pairs and fours may depend more on how well discussion is going than on the nature of the question or task that has been set.

No time has been set aside in the exercises in Chapter 2 for the discussion and formulation of practical steps which can be taken on the basis of what has been learnt in the exercises.

A second variation in structure concerns how tasks are structured within each stage. For example, in the exercise 'Taking notes' I have suggested dividing up the time spent in fours into two periods during which different questions are to be addressed. When it is felt that students may have difficulty drawing out principles or generalizations from specific experiences it can help to deliberately carve up the task to separate becoming familiar with the nature of the experience from drawing conclusions from it. Sometimes one task is too big to handle and it can help to divide it up, and to divide the time allocation up in order to emphasize the division of task.

A final variation, and one which many people adopt, is to go through the cycle — of working alone, in pairs, in fours and as a whole group — more than once. Some activities produce useful insights very quickly which can be put to good use almost immediately, and it can be ponderous and inefficient to spend a whole hour extracting these insights. In the exercise 'Using books' for example, even a very brief experience of trying to find out what a book is about in a very short time can lead to many good ideas and insights emerging which students are keen to employ straight away. This exercise uses pairs to raise some of these initial ideas and then puts students back to work on their own. The exercise 'Writing — being flexible' puts students through the cycle more than once as they get practice at undertaking a task and then ideas from comparing their experience with others before going on to get more practice.

The possibility of repeatedly putting students through the cycle seems an attractive one and appears to offer the opportunity of achieving more in a given time. However, it is very easy to go too far and make each stage so short that only superficial analysis takes place and only trivial outcomes emerge. Students who are used to spending an hour just listening, an hour just discussing, or an hour just working alone, can have difficulty enough adjusting to changing their role during one-cycle structured discussions without having to adjust repeatedly and perhaps before they have even settled into the role the last stage demanded. Teachers adopting structured discussions as a teaching method seem to try and pack in as much as possible to begin with before settling down to a less complex and frenetic structure.

**Back-up materials**

Sometimes the best-prepared exercises do not work all that well. This can be because students were not sufficiently engaged by the initial task to have worthwhile material to take to subsequent discussion. Students who are not used to questioning themselves about the way they study may find even very clear instructions difficult to understand and follow. They do not have a clear enough idea of what sort of things can be said about a set of notes, or a past learning experience, to get involved in thinking about it. On these occasions it can help to have some additional materials at hand to help students to conceptualize the task facing them in analysing their own studying. In the exercise 'How do we learn best?' I have offered an example both of what a student might use as input to the exercise, and what the student's personal outcome from the exercise might look like. I think examples like this can be enormously useful in helping students to recognize that a lot of analysis and progress can be made without any sophisticated language or specialist knowledge about learning.

An alternative way of providing such a model for the task you are giving students is to undertake a 'live' analysis yourself, for example, the notes offered with the exercise 'Taking notes'. You could simply give a few off-the-cuff comments about what you see the function of such notes as being and highlight any strengths or weaknesses you may see. This would not be in order to identify the correct and incorrect way of writing notes, but to offer a model of how to approach thinking about note taking.

Sometimes what students bring to an exercise may not allow much scope for discussion. For example, they may all have written a very standard laboratory report to a very strict pattern, and brought this as a basis for discussion of writing reports. The lack of variation would limit the range of issues raised. It can be useful in these circumstances to produce your own laboratory report, written in a contrasting way, as a handout to introduce more variety, or, as with the exercise 'The writer's intention' a pair of selected reports which, by their contrast, raise the specific issues you wish to raise.

**Putting your own course together**

It seems that few people use just one of these exercises in isolation with their students. Most put several together into a longer 'workshop', or into a short course on a once-a-week basis. There are some very good reasons for doing this. Students' study habits are often very deep
library use will not get students very far very quickly ever. There is simply too much specialist knowledge involved which, if it is not known or is ignored, will cause great difficulties. Library use is an area where, unlike most other aspects of studying, there are right and wrong ways of doing things which will either find you what you want or fail to find it for you.

Being able to use your library effectively is clearly to do with learning, but there are other aspects of studying which are similarly dependent on knowledge rather than underlying conceptions of purpose, but which are not to do with learning at all. I am referring here to the great wealth of academic conventions within which most higher education is framed. The acceptable and unacceptable turns of phrase in essays, the appropriate conventions of referencing, the structure of laboratory reports, and even the less tangible conventions concerning the expression of personal opinions and the position of originality, all make up a body of knowledge about studying which is vital to students' performance, but largely irrelevant to learning. If students do not become familiar with this knowledge, or ignore it, they will suffer in terms of their grades, though it is unlikely to affect what they learn in any important way.

Such academic conventions make up part of what has become termed the 'hidden curriculum' (after Snyder, 1971) — that is the curriculum which, while not the official curriculum, is the one to which attention must be paid if one is to succeed. For example, most students are heavily overloaded and it is quite impossible to do everything required. Learning what can be safely left out is learning about the hidden curriculum. Paying attention to some aspects of the hidden curriculum may mean little more than being aware, or being 'cue-conscious' (Miller and Parlett, 1974). But equally students can go far beyond this. Making a good impression on the teacher, recognizing the teacher's particular personal theoretical biases and preferences, learning to answer multiple-choice questions when the answer is not known, deliberately playing on quirks of the assessment system, and carefully spotting examination questions and ignoring all other subject matter; all these may have more effect on grades than the efficiency of study techniques and yet all have nothing whatsoever to do with learning.

The extent to which students will be aware of the hidden curriculum and be able to distinguish between different demands made on them will depend on their overall sophistication as learners. Indeed the ability to make such distinctions is used as an indicator of students' development by Säljö (1976b — see Chapter 5). However, whether a course should set out to encourage students' attention to the hidden curriculum is a difficult ethical issue.

My own position is that students should be free to choose how to go about their studying. If a student is not aware of 'what counts' in his institution, then he is not free. How he chooses will depend on his overall orientation, and I have an obligation to help him explore the way his approach to studying will help him achieve his goals. To ignore the hidden curriculum and to pretend that only diligence and efficiency bring rewards is to lose credibility as a realistic source of help. But there can be a narrow divide between teaching students to learn and teaching students to play the game successfully.
the 'listener' took. Their conclusions they would bring with them to the next exercise as their contribution to the initial discussion. At this exercise the first five or ten minutes would be devoted to exchanging experiences concerning the 'experiments' tried out as a consequence of the contracts made at the previous exercise. Students who did not fulfil their contracts would have nothing to contribute. There can be considerable social pressure not to do this without any intervention by the teacher whatsoever. It is not necessary for the teacher to know even whether contracts have been made or fulfilled, let alone what the contracts and their outcomes consisted of. In fact it seems to encourage students to take responsibility for this sort of personal growth if the teacher's authority is not involved in any way.

Sometimes such contracts are quite difficult to formulate in an acceptable way. Students are unlikely to have any experience of doing so, and it can be quite a worrying prospect. Teachers can be helpful here by making suggestions. For example our compulsive note taker might find the prospect of making a contract with a confident listener too challenging, and might not, in any case, trust the 'listener' to take an adequate set of notes from the lecture. Less confident students tend to stick together and make contracts with each other. One way to cope with this might be to suggest that one of a pair of compulsive note takers should listen for the first half of the lecture while the other should listen for the second half. Their notes would be combined to form a full set, and both would get the experience of just listening. This sort of perfectly reciprocal contract seems to work best where students are anxious and not too trusting. The teacher may need to be inventive and sensitive if contracts are to be made and fulfilled.

Such contracts can therefore be used to help make the transfer, of ideas and reconceptualizations which take place during exercises, to everyday study. They can help the exercises to be based in realistic learning experiences instead of somewhat unrealistic games and simulations of learning experience. They encourage students to use each other as sources of ideas and feedback concerning different ways of learning, and help make concern for studying a legitimate social activity instead of a private worry.

Ideally, the more closely such a course of regular weekly exercises is built into the routine of studying the better. Very often timetabling and the availability of rooms make times like Thursday lunchtime or even the Wednesday afternoon sports time the only slots available for such exercises. They can then easily be seen as having low priority in the eyes of teachers, obviously outside the normal curriculum and patently not necessary. The allocation of a conventional timetabled slot and conventional teaching room helps legitimize and prioritize study courses, as does their being 'advertised' as if they were a normal teaching and learning activity instead of something specially laid on by the medical service for struggling students. Being run by students' own teachers rather than counsellors or librarians obviously helps their legitimacy, too.

I have been told of courses which have been so integrated into conventional teaching that they are not perceived by students to be courses at all. Conventional lectures, tutorials and essay-writing tasks can all be modified and have built into them devices which encourage students to be reflective about the purpose and process of their study methods. The sort of intellectual development described by Perry (1970) which I discuss in Chapter 5 must be the goal of students' entire education, and it is absurd to relegate all students' development as learners to a course separate from their mainstream education.

Limits of the approach

The approach propounded in this book assumes that developments in students' study techniques take place in a useful and purposeful way when rooted firmly in developments in students' understanding of the nature of the learning tasks with which they are confronted. It is this development in students' understanding, and the reflectiveness, awareness, autonomy and autonomy that it embodies to which this book is primarily addressed. However, several of the exercises in Chapter 2 are concerned more with technique than with understanding, even though they use a student-centred rather than a didactic approach to explore technique. Some areas of studying are so bound up with technique and simply knowing things, that a wholly student-centred approach makes less sense. A good example of this is the use of libraries. A good deal of what you need to use a library appropriately is concerned simply with information about the organization and layout of the particular library you use. There is still plenty of scope for the use of student-centred exercises to help cope with students' anxieties about using libraries, to help express a student's rather than a librarian's view of library use, and to link library knowledge with actual practice. However, it can be very difficult to design an exercise on library use without understanding how the library actually works, and also, without understanding the way library structure knowledge in the particular discipline in which students are studying. Simply telling students how libraries work and how the journal and abstract system is structured may help them much more than telling them how to take notes will help them with note taking. But running a totally non-directive exercise on
CHAPTER 4

Why not just tell students how to learn?

By far the most common way of attempting to improve the way students learn is to give them advice. As Alex Main (1980) has pointed out, there are now over one hundred How to Study manuals in print in the English language. Every university bookshop stocks several of the more popular of these. So the obvious step to take, and the one most often taken, is simply to give some of this readily available advice to students. Unfortunately this is not always a very useful thing to do, and this section will attempt to explain why this is so. There are a number of assumptions which underlie study skills advice which this chapter will question in some detail. The first of these assumptions is that it is well known what study skills consist of.

Do we know what the necessary study skills consist of?

This would at first seem to be an unnecessary question. We all know that students need to be able to read effectively, take useful notes, write good essays, solve problems and so on. Unfortunately such an analysis does not take us very far. What, for example, does effective note taking actually consist of? Again, we might think the answer obvious. Not so. If we were to ask a room-full of successful academics to note down from a lecture and then examine what they had done, we would find that they had all done something rather different, and that some people would have taken no notes at all. This is not merely a conjecture, I have used this as a demonstration on several occasions. The same is true of practically any aspect of study activity; Successful learners do different things and different techniques suit different people. Moreover, even if we were to find one form of notes cropping up frequently, this would be an insufficient basis for advising our students to take notes in this way. While it is possible to observe what a note taker is writing down - the layout, use of abbreviations and so on - it is extremely difficult to reveal the processes of selection of subject matter, its transformation and organization, which determine why particular items are written down. Two sets of notes of outwardly similar form can have been produced by entirely different processes, for entirely different reasons, and with completely different learning outcomes. Recommending only the outward form notes should take is utterly unhelpful to students.

It is not even the case that note taking in general has been shown to benefit learning. Numerous studies have shown note taking to be associated with no better learning outcome than not taking notes (e.g., McClendon, 1958, Eisner and Rohde, 1959, MacManaway, 1968) or even for note taking to produce poorer learning outcomes (e.g., Peters, 1972, Crawford, 1925). Hartley and Trueman (1978) have even reported a negative correlation between amount of note taking and degree classification - the more notes were taken, the poorer the learning outcome. Negative, or no-difference, findings are however not the only findings on the benefits of note taking, and there is no clear indication whether note taking in general is useful. Howe (1977) has argued that those studies which have shown beneficial effects of note taking have done so following prolonged lectures where note taking has performed the function of maintaining attention.

It might be, we could argue, that the real benefit of notes is at the time of revision. Again, evidence would not support us. My own experience, that students who say they take notes in order to revise later on are merely using a conventional belief in order to rationalize an habitual and thoughtless activity, is well borne out by studies of students' use of their notes as revision tools. In a study carried out by Hartley and Cameron (1967) for example, while every single student said he intended to do follow-up work based on a particular set of notes, eighty-seven per cent of them did not even subsequently read those notes.

In their review on note taking, Howe and Godfrey (1978) suggest that the optimum procedure is not to take notes at the time of initial study, and to use a handout, a teacher-produced summary, as a revision tool, and that this results in better test scores than any other combination of activities.

I am not arguing here that we should advise students not to take notes: I am merely pointing out that what one might take to be an obvious piece of advice to give to students may be somewhat questionable. If we were to train our students to use a particular note taking technique we would almost certainly not be training them to do any-
PART 2
The rationale for the approach

I have written the rationale, for the student-centred approach outlined in Part 1, in four stages corresponding to the four chapters in Part 2. The first stage involves examining the conventional approach taken to teaching students to learn, that is, *telling* students how to learn, for its validity and effectiveness. What is wrong with it helps point towards an alternative approach. But this book's alternative has been directed by two other influences: contemporary research into student learning, outlined in Chapter 5; and my personal beliefs about how people learn and change in general, stated in Chapter 6. A particular method of running tutorial groups was available as a form in which to realize this alternative, and this method is introduced and its own rationale explained, in Chapter 7. Together, these four chapters are intended to provide a conceptual framework which can be used to build on and go beyond the approach outlined in Part 1 and to use it in a creative way. Student-centredness is not simply a technique, it embodies assumptions and beliefs about how people learn. If it is to be used in more than a rigid, routine and desultory way, then these assumptions and beliefs need to be made explicit and form the guiding principles of its use.
Graphs of the curve appear in all sorts of study skill books, usually displaying a bold disregard for labelling or graduatiing the axes or saying from whence the curve came. In fact it comes from Ebbinghaus (1885). He himself learnt long lists of nonsense syllables (e.g., FUJ, BEH,...) until he could remember them all. Then he waited for various lengths of time and saw how many times he had to go back through the list before he could remember them all again. His measure of retention was, therefore, how much effort had been saved in relearning the list. He found that after about twenty minutes he had to look through the list half as many times as he had done originally. This is interpreted by Buzan (1973) as meaning that fifty per cent of all learning is forgotten after twenty minutes. As any elementary educational psychology textbook will tell you there are some problems with such an interpretation:

1. The material Ebbinghaus used is absurdly unlike academic material. If you use meaningful material (e.g., lists of words or sentences) even within the other constraints of the experimental paradigm, the curve is much flatter, (e.g., Tyler, 1933). Obviously one remembers many things indefinitely.

2. The method of learning is absurdly unlike student learning. Going through and through a list may be all that one can do to memorize unconnected meaningless material. Students naturally adopt far more efficient strategies for learning meaningful material, unless advised otherwise. Clearly most things are 'memorized' in one trial, without any conscious effort. For example, do you remember your journey to this room this morning? Simply interacting in a meaningful way with the world results in a memory trace being formed. Our main problems are in retrieving such traces.

3. The method of testing memory is absurdly unlike student assessment. We do not put students through an examination again and again until they are word perfect and then see how long that took compared to such perfect mastery during the previous term. When people are asked to remember sentences, they remember the meaning without the surface form. For example you can probably remember the gist of how I opened this chapter without remembering the exact words I used. We make sense of our experience and automatically store in memory the sense we have made. If I tested you on your verbatim recall of the first sentences of this chapter you would score very poorly indeed, even if you had remembered the important things about it.

4. A good deal of the forgetting in the Ebbinghaus paradigm had been found, by the 1950s, to be due to 'interference' from the learning of other lists prior to the one tested, or between learning and recall of the one tested, rather than simply to passive decay of the memory trace. The more similar the interfering lists are, the more forgetting takes place. The learning of the crucial list is not unique enough to distinguish it in memory from memory traces of other lists of nonsense syllables. This is very unlike the learning situation facing students. If you were to test students on the exact form of words used in one of two different lectures on the same general topic, then presumably the similarity of the phrases habitually used would cause them problems in distinguishing one lecture from the other. But if you were to test them on their understanding of some concept or principle from one lecture then the similarity of conceptual framework from the other lecture would obviously help and not interfere.

Rehearsal

Clearly the forgetting curve is of extremely dubious relevance to student learning. This has not prevented Buzan (1973) and Main (1977), for example, from going on to give advice to students on the basis of what happens to this curve when you rehearse. A graph is prepared, based rather loosely on Jost's law (1897). It is derived from exactly the same experimental paradigm as Ebbinghaus employed. Successively relearning the list of nonsense syllables results in successively shallower forgetting curves. It is concluded, in study skills advice, that to slow the relentless march of forgetting, you need to rehearse your material, at successively longer intervals. This must in-
thing which is necessary, and our hopes that our students would become more efficient learners as a result would almost certainly not be supported by evidence. The same sort of problems arise if we examine any other aspect of studying than note taking. Many 'study habit inventories', paper and pencil tests of study skills, have been developed to test whether students are going about their studies in recommended ways. Such inventories typically contain items right across the range of learning activities on reading, organizing time and so on. Even the most extensive studies which have attempted to identify study habits that are associated with academic success have typically found only a very weak relationship between inventory scores and examination results, and seldom correlations even as large as + 0.1 (cf. Entwistle, 1977, Farrell, 1977). Furthermore, even if such correlations were greater they would not indicate a causal relationship between study habits and success. Many study habits are examples of the consequence of the way a student approaches studying, and cannot be taken to be causes of study success. For example, a diagnostic study habits inventory used by the University of Minnesota includes an item which asks students whether or not they sit at the front of the class. They also advise students to sit at the front. This is because they have found that students who sit at the front do better. This is obviously nonsense. Keen students sit at the front and keen students do better. Sitting a bored student at the front will not make any difference. Unfortunately practically all evidence concerning the consequences of study skills for learning is of this correlational nature. Edfeldt (1976) has argued that there is no evidence of causal relationships between observable study behaviour and learning outcomes.

It is vital at this point in the argument for us to recognize that this does not mean that all study techniques are useless. What it does mean is that if we generalize across all students and across all learning contexts, then we will not be able to detect any clear relationship between study techniques and learning outcomes. If we give advice in a generalized way, without regard to the individual student, or the particular course he is taking, (or the demands of its assessment system) then it is not very likely that we will have a positive effect. We do not, in general, know what the necessary study skills are, and it seems unlikely that any exist.

Is study skills advice rooted in sound experimental psychology or learning theory?

The advice or exercises one sees offered on study skills are often accompanied by implied, or even explicit, assumptions that it is all soundly based in the psychology of learning, scientific experimental work on memory, a fundamental understanding of the perceptual and cognitive processes involved in reading, and so on. Use Your Head the BBC book and TV series, which is widely used, the National Extension College's How to Study Effectively course studied by thousands of students, and most of the commercially available books and courses, claim scientific respectability in one way or another. Even when no such claim is made explicitly there is usually an implicit assumption that the advice offered could be justified on a sound experimental basis if needed. This is not just folk lore or common sense, the advice screams at the student 'it's scientific so how can you resist it?' Even when advice has managed to avoid such posturing I feel there is still the danger both that students will gain an over-inflated notion of the credentials of advice and that those giving the advice will be tempted to place more confidence in advice than is justified. I would like to question these apparent credentials and shake teachers' over-confidence by taking a close look at just one example of an area of advice that is given extremely widely but which has the most disreputable basis. The area I have chosen is that of advice on learning and memory. The supposed scientific basis for this advice may indeed be familiar to you as scholars in education and educational psychology — you may simply have never guessed that advice you were familiar with could possibly have been derived from such a basis. The inept way this area has been informed is an indictment of applied psychology, and also of the tendency for purveyors of advice to simply copy their wisdom from earlier purveyors of advice without ever questioning its basis.

Advice on memory and learning

Exposing the scientific basis of training in memory, and of study skills advice supposedly based on the psychology of learning, is like shooting fish in a barrel.

The forgetting curve

The main characteristic of memory, highlighted in advice (cf. Buzan 1973) is usually that things are forgotten very quickly indeed unless something is done about it. There is frequent reference to the dramatic and awe-inspiring forgetting curve (cf. Freeman, 1972).
effectively. However, even if we have correctly diagnosed a need for a necessary study skill and we have a valid analysis of what that skill consists of in order to be able to give the advice, we are still likely to have a very great deal of difficulty getting the student to adopt the skill. Both giving advice and training through exercises, involve many problems.

Some advice, though based on a sound understanding of what the end product of studying looks like is impossible to take because it lacks an understanding of the process by which this product is achieved. Advice on how to concentrate, for example, may include a reasonable description of the state of mind when one is concentrating, but be completely unhelpful as to how to achieve it. People simply cannot concentrate 'at will', it is a state reached as a by-product of being engaged in, or absorbed by, a task.

Some advice is impossible to take because what is described is impossible. The advice, on writing sentences, that one should first think through to the end of the sentence before starting to write it is simply impossible to follow even for experienced proficient writers. (Britton, 1975). On the other hand some advice is impossible, or disruptive, to follow for particular people. This may be partly due to the variation between learners, and partly due to the weakness of the understanding of studying on which the advice is based. A good example is advice on planning written work before undertaking it. It is almost universal to advise students to produce a plan for an essay before they write it. James Britton (1975) has studied the development of writing abilities in secondary school children and found that their ways of planning, and their attitudes towards planning, varied very widely:

Before any big essay, for example, in English Literature, I think to myself 'Yes, plan an essay like Miss . . . said' but I begin to plan it and then suddenly the urge to start the actual piece of written work is over-powering - and 'bang' goes the plan . . . I can rely on this happening every time without exception.

I cannot bear writing to a plan. I can rarely be induced to write my own, and the thought of writing to someone else's plan fills me with horror . . . It has just occurred to me that when writing literature essays I always scribble down all clever thoughts on paper first. Then sometimes I may even write a complete rough essay but usually I write the final essay, using the written facts as a guide to help me think out the argument. I do not know if 'clever thoughts' rate as a plan . . .

Earlier this year when I was revising . . . I learnt that I write better without a plan. If I just pour my thoughts out on paper I build up a type of plan anyway. But if I try to jot down notes my mind just goes blank.

The problem here seems to be the way students perceive planning. The real planning many people do is often so informal and messy as to pass unrecognized. Clearly the lack of any planning at all can be disastrous, but very formal planning can also be disruptive and unhelpful. When advice over-formalizes what is normally an informal process it can become impossible to follow. For example, the reading method SQ3R (Survey, Question, Read, Recall, Review), which is described in many study manuals, is meant to loosen up reading and to free readers from rigid unadoptive habits. But the comments of some students suggest that it may itself be understood as an inflexible set of rules and seen as a tedious and irrelevant route to have to take. In other cases the very communication of the message may embody such contradictions. A model of 'flexible reading' presented in one manual (Open University, 1979, p.27) uses an algorithm to convey its message. One might argue, however, that this algorithm presents an appearance of inflexibility.

For example: 'Is the book a collection of articles?' 'Yes'. 'Preview: rapid skimming of whole book, establishing content, structure, tone. Do you intend to read on?' 'No'. 'Is the book only useful in certain parts? etc. There would appear to be a conflict here between the intention of the advice and the effect it would be likely to have if it were followed.

Some advice does not lead to any change, even when it has been accepted by students. There are several ways this seems to happen, and they all emphasize some aspect of the difference between knowing how to do something and actually doing it. Students often have rationalizations for their study habits which bear little relationship to what they actually do. As I have already mentioned, students often claim that the reason they take notes is to revise from them afterwards - but they do not often revise from them because this can be such a dull and profitless activity. While attempting to teach students how to study through a National Extension College course (Freeman, 1972) my students were required to send me their notes from a chapter of the course text which covered note taking. A good proportion of these students had copied out, word for word, the advice in the text always to take notes in one's own words. Also, some had copied advice to structure notes in one's own way and use one's own headings, and had embedded this advice in notes laid out, structured, and headed, exactly as in the chapter. Clearly these students had learnt the advice, at some level, without it influencing their studying in any way. Sometimes students are well aware of the gap between what they 'ought' to be
volve, says Buzan, rehearsing your notes immediately, after one day, one week, one month, etc. Apart from all the objections to the evidence for this phenomenon, outlined above, there are bizarre possibilities in store for any student who should follow such advice. A conventional student attending, say, four lectures a day and also taking notes from, say, two text sources a day, would, after only five weeks, be rehearsing 120 sets of notes a week! I have never met a student who would be willing to undertake such a task.

The learning plateau

The learning plateau is an established part of educational mythology and appears again and again in advice to students on how to study. For example:

At stage (1), little progress is made because the subject is unfamiliar to the student. Then he enters stage (2), and makes rapid progress. After stage (2), during which he learnt quite a lot of material, he enters stage (3) - the plateau. Here he seems to be in the doldrums. Despite effort, no progress seems possible... The plateau is the particular enemy of the home student who fails to realize that everyone reaches this sort of plateau. But if only they persevere they eventually move on to stage (4). At the end of stage (4), the student reaches his peak in this particular topic.

(Freeman, 1972, p. 19)

A student once explained to me that the reason why she was no longer getting anything out of her course text was that she was probably at the learning plateau she had been told to expect.

As usual with such advice, no source is provided. However, Maddox's How to Study cookbook (1963, p. 51) at least describes an experiment on which it is based, and this turns out to be none other than the work of Book (1925). Book reports evidence of 174 consecutive daily half-hour practice sessions on a typewriter. In some individual cases there was, after about fifty days, a slight levelling off, for twenty days, of the daily increase in the number of correct typing strokes made during the session. In fact the learning plateau is a very unreliable and elusive phenomenon and tends to be tracked down only during similarly drawn out practice with simple motor skills. Its relevance to conceptual learning is therefore rather limited!

A danger with such pseudo-scientific 'explanations' of phenomena experienced by students is that they encourage a passive approach towards learning. Buffeted this way and that by apparently inexorable laws of learning the poor student must feel helpless in the face of study problems.

The sort of criticism I have made here, of the inadequacy of the empirical basis of some of the advice on memory and learning, can also be made of advice on many other study skills, especially of advice on fast reading. I would not like to give the impression that all the most commonly given study skills advice has no reputable basis whatsoever. However, its basis is often a good deal less sound than books and courses suggest.

What happens when you tell people how to learn?

Despite all the objections and problems which have been raised so far we may sometimes still have the feeling that we know exactly what it is that a particular student ought to be doing if he or she is to learn more
first thing that happens when you train someone to do something new is that they get worse at it. In almost any area of training, changing technique initially results in worse performance. A new reading technique will take you longer, a new way of writing essays will exhaust you, a new way of taking notes will result in you writing down a lot of nonsense. In time, with practice and support, you may well get better, much better than with the old technique. But the first experience is usually one of unfamiliarity, confusion, slowness and self-consciousness. New techniques temporarily disrupt studying. Without support, encouragement, and the opportunity to practice in contexts which do not matter too much, it is very likely that any new technique will be dropped at this early stage, before it starts being helpful.

However, a student’s problems are not over if he has got past this point and actually adopted the new technique. Being trained may not always be a good thing unless the training also involves some help as to how to use the skill appropriately and with purpose. Most study techniques embody assumptions about the purposes of the technique, or the purposes of studying in general. The student may well not be aware of these assumptions, may misunderstand them, or may not share them and not realize any incompatibility. This may have unfortunate consequences. Students attending study skill training programmes often seem to trustingly abandon all responsibility toward the purpose of the tasks in which they employ the technique. For example, William Perry (1959), as cited in Chapter 2, describes what happened when 800 Harvard students with superb fast reading skills tackled a chapter of a book, and were stopped after twenty minutes:

We can report that their rate of work in this particular approach was astonishing and their capacity to answer multiple-choice questions on detail was impressive. Some of them had read as many as twenty pages of very detailed material and were able to answer accurately every sensible question we could ask them about the detail . . . We asked anyone who could do so to write a short statement about what the chapter was all about. The number who were able to tell us . . . was just one in a hundred-fifteen.

In other words ninety-nine per cent of these skilled readers were going about reading this chapter in a way which did not involve an attempt to find out what it was about. Perry described their efforts as ‘obedient purposelessness’ and went on to conclude:

Until such students revise their sense of the purpose of reading, an increase in effort is likely to produce only worse results.

. . . the mechanics of reading skill are inseparable at this level from the individual’s purpose as he reads. If you train someone in mechanics alone, he drops right back into his old habits the minute he picks up an assigned text.

This sorry state of affairs cannot be remedied simply by giving advice. As one of Perry’s students who had discovered that he had just approached his reading in an inappropriate way remarked: ‘Oh Lord, how many times have I been told!’ Training in fast reading is particularly prone to misorientation. Worse still, Perry found that a third of the students who were misoriented in their reading also appeared to be oriented towards the wrong goals in their writing. The crucial importance of orientation and purpose should be noted here and will be picked up again in the next section.

It seems to have been an unquestioned assumption of educational technology that one can diagnose the absence of crucial learning ‘skills’ and cure this by training students in these skills. I hope this section has made it clear that this is a questionable assumption. I do not want to claim that all ‘study skills’ advice, and all attempts at training students to use techniques, are absolute nonsense. But I hope I have made it clear that considerable, and sometimes overwhelming, problems face attempts to give advice and train students in a generalized way. At the right time, in the right context, both advice and training have their place, but as servants of other approaches, and not as ends in themselves.
Having completed this impressive task she could not resist offering her misuse of evidence, appeals to authority, emotive language, and so on.

Carried out a superb job of demolition on the arguments, pointing out powers of critical thinking on some submitted an assignment to me in which she was asked to exercise her one piece of work. One of my National Extension College students had whether the manager of the England football team is any good. This be evaluative in essays, when they are perfectly capable of being evaluative in much advice is a pretty off-putting one to those of us who like to feel that learning has more to do with imagination and creativeness and who recognize that learning plays only a limited part along with many other aspects of our lives. There are limits to what I am willing to do in order to become more efficient. I may be frequently missing deadlines but I am not willing to timetable myself any more rigidly. Working late at night may be less efficient than early in the morning, but I can face working early in the morning. We often seem to ask of students things we are not willing to do, or even try, ourselves. It is not very surprising when they do not do what we ask.

Finally, students sometimes do not follow advice, even though they value it, because it involves a threatening attack on their existing ways of doing things. Even the most confident of us would hesitate at the thought of making a complete twenty-four hour timetable of our work for the next week. We know that it would help us see how much we were getting done and help us to plan our tasks, but the thought of being confronted with all the unreconcilable demands and writing down everything: 'watched TV'; is just too horrible, so we do not do it. I have had students who know that the way they take notes is ridiculous and useless, but who lack the confidence to abandon their note-taking technique for another which they know will be more useful. In my experience, the less happy and secure a student is in his existing habits, the less likely he is to abandon them in the hope that some new technique will improve things. Simply knowing the advice is not enough.

I believe that quite often students do not follow advice simply because what is suggested sounds unappealing. The model of a super-efficient, hard-working, well-organized, conscientious student embodied in much advice is a pretty off-putting one to those of us who like to feel that learning has more to do with imagination and creativeness and who recognize that learning plays only a limited part along with many other aspects of our lives. There are limits to what I am willing to do in order to become more efficient. I may be frequently missing deadlines but I am not willing to timetable myself any more rigidly. Working late at night may be less efficient than early in the morning, but I cannot face working early in the morning. We often seem to ask of students things we are not willing to do, or even try, ourselves. It is not very surprising when they do not do what we ask.

One way of overcoming these problems with the giving of advice is to go one step further and train students to use whatever methods of study they happen to prefer. There are also problems with training. The
CHAPTER 5

In what ways do students develop as learners?

If diagnosing students' learning ills in terms of their lack of general learning skills brings with it a multitude of problems, how else are we to approach helping students? If it is not primarily learning skills that they lack, how are we to understand why students sometimes do not learn effectively? In this section I will examine the nature of differences between the ways people learn, and, in particular, examine how people develop and change as they become more sophisticated learners. If we can understand what underlies this development we will be in a better position to foster it.

Students do not simply study in the way they do because they only know how to use certain study techniques. Students actively choose to study in the way they do.

Nor can their studying be understood simply in terms of fixed personal characteristics such as learning style (e.g., field-dependence/independence or serialist/holist). I have argued elsewhere why learning style explanations are, by themselves, inadequate (Gibbs, Morgan and Taylor, 1980).

There are many studies in which students have been shown to give reasons for the way they study. In studies by Becker et al. (1968) and Snyder (1971) in American universities there are vivid examples of students talking about their studying, and why they believe they work in the way they do. Similar students in the context of British universities (e.g., Parlett et al. 1976) also describe students as definers of their own study tasks. It might be argued that such student explanations are merely post hoc rationalizations for behaviour which is determined by the students' limited skills or fixed learning styles. However two recent longitudinal studies in British universities would seem to overcome this objection, as they trace changes in students' explanations over the course of their studies.

Beaty, (1978) in order to understand students' study habits and use of the library, interviewed students over the full three years of their course, about why they were studying. She developed the notion of the 'study contract' which students implicitly make as a sort of statement of aims and ways of achieving those aims while at university.

. . . students come to University with ideas of what it will be like and with aims of various stages of development. Through interaction with others and experience of the University and course they develop a study strategy, tentative at first, which is consistent with their aims and self-identity. This organisation of attitudes and study patterns soon affects educational outcomes in the form of essay marks, but also in knowledge gained, etc. This provides the student with objective and subjective feedback on the effectiveness of their strategy and allows them to reinterpret and perhaps re-design the Study Contract by changing strategy or perhaps aims in order to be consistent once more.

Beaty showed second year students the transcripts of their first year interview and they recognized the sentiments they had expressed a year before and were able to explain how things had changed and how they now saw things differently. This active reassessment and changing of study strategy over time is also illustrated in a study by Mathias (1978). He identified two general 'types' of approaches to learning: 'course-focus' and 'interest-focus'. Course-focused students stuck to the syllabus (rather in the manner of Hudson's 'syllabus-bound' behaviour) e.g., 'if you do things which are not on the syllabus they're not going to come up in the exams. The only thing you really come to University for is to get a degree.' In contrast, an 'interest-focused' student said 'If I were really interested I would try to read more about it and possibly go and see the tutor again depending on how deeply interested I was.' Mathias points out that there can be no simple explanation for this differences:

These behaviours did not represent static mental characteristics of students fixed in time, but rather could vary over time as the student moved through his degree course. It seemed more likely that a combination of factors were at work whose interaction and behavioural product was mediated through some process of interpretation on the part of the student.

For example, some students in Mathias' study started off with a weak
course-focus but over the three years of their course changed their orientation to a strong course-focus:

Over the first year they comfortably coped with the degree course, seemed able to work with little support and showed a high level of interest in their chosen subjects in which they were willing to place extra effort. They sought a high level of interaction and stimulation from their tutors in order to engage their interests. However during the second year they reassessed their attitude to University and began to question their high level of commitment to their study. This reassessment seemed to come about through a growing self-awareness of the relationship between themselves, University study, and other interests and activities University had to offer. They carried into University a style of work developed at school which was characterized by a high level of commitment. At the same time they also had high expectations of intellectual stimulation. However, they were somewhat disappointed with the level of intellectual stimulation they encountered on their course . . . By the third year they were less likely to emphasise their own interests . . .

A 'strong course-focus' has implications not simply for the amount of work students put in or the degree of commitment, but what is studied and how. Study methods are adopted and used in ways which are intended to achieve particular goals and it makes little sense to talk about study methods without reference to the use to which they may be put by students. The range of general orientations students have when they join university is poorly understood at present. Furthermore students may initially be unclear or unrealistic about their orientation. The development of approaches to learning parallels the development of awareness of orientation and of the appropriateness of particular study methods for particular orientations.

Not only do students have different general orientations to study, but they understand the demands of specific learning tasks in different ways. And, as with orientations, this understanding develops and changes over time. I will described two complementary frameworks which are currently available to help us to understand the nature of these developments. In both these frameworks the focus of attention is not on the acquisition of study skills, but on the development of increasingly sophisticated conceptions of what learning involves. Students come to understand progressively more about studying. There are many clues that this is so from studies in British contexts. For example Miller and Parlett (1974) have found that some students were much more aware than others of the demands of the learning context. They found almost half the students in their study to be 'cue-deaf' —

that is they were oblivious to cues about exactly what was to be learned. In both the Beatty and Mathias studies referred to above there are numerous suggestions that students become more aware, and more able to consciously choose personally relevant learning strategies, as they become more experienced learners.

The first framework I shall describe is one outcome of an extensive study at Göteborg University entitled 'Study Skill and Learning'. The background to the aspect I shall describe is that some students were demonstrated to have achieved exceptionally poor understanding from reading articles and indeed from taking entire courses. In one study (Dahlgren, 1979a) some university students' understanding of fundamental economics principles was no better after an economics course than before. Indeed in some cases it was actually worse. What is more, some conceptions held by these students were not in any important way different from those held by second grade schoolchildren (Dahlgren, 1979b). How was it that these students could understand so little as a consequence of a university course? What were these students doing in their studying?

In both experimental studies, and in the context of everyday studying, the ways students experience studying has been examined by the Göteborg group. In experimental studies (e.g., Marton and Saljö, 1976a) students have been asked to introspect about their experience of reading a text. It has emerged that students' descriptions are of only two rather different sorts. In one sort, students described their approach in the following way:

Well, I just concentrated on trying to remember as much as possible.

I remembered . . . but, I'd sort of memorized everything I'd read . . . no, not everything, but more or less.

It would have been more interesting if I'd known that I wasn't going to be tested on it afterwards, 'cos in that case I'd've more, you know, thought about what it said instead of all the time trying to think now I must remember this and now I must remember that.

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In the other sort of description, students said:

. . . I tried to look for . . . you know, the principal ideas . . .

. . . and what you think about then, well it's you know, what was the point of the article, you know . . .

No, I . . . tried to think what it was all about . . .
pass rates was misguided, and that selective measures should be taken which concentrated on particular categories of students.

It was found that students' answers fell into four categories:

A. Selective measures were to be taken, i.e., only for particular categories of students.
B. Different measures were to be taken for different groups.
C. Measures were to be taken.
D. There are differences between groups.

These students were also asked to introspect concerning the way they had gone about reading the article, and their comments were categorized in terms of the distinction described above, i.e., surface approach/deep approach. The relationship between the approach students took and what they learned can be seen in Table 1.

Table 1  Relationship between approach and outcome

<table>
<thead>
<tr>
<th>Level of approach</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface</td>
<td>0</td>
<td>1</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Not clear</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Deep</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

It is clear that the approach students took to reading was very important. None of the students who described their approach in terms categorized as a surface level approach completely understood the author's argument, while none of the students who took a deep approach failed to gain a good understanding. This sort of clear-cut relationship has been demonstrated again and again. Students who adopt a surface approach understand less.

Further work at Göteborg (Svensson, 1976, 1977) has shown that this relationship exists in everyday studies as well as in experiments. In an experiment he found students adopted one of two different approaches. Students who adopted what he calls an 'atomistic' approach focused on specific comparisons in a text, focused on the parts in sequence, on memorizing details, and lacked an orientation towards the message as a whole. In contrast, students who adopted what he calls a 'holistic' approach focused on understanding the overall meaning of the text, searched for the author's intention etc. (These categories are clearly similar to the surface/deep distinction, as well as to distinctions drawn by Bruner, and by Pask, on the basis of rather different evidence.) Students were categorized according to which approach they described themselves as adopting, and also according to whether their recall of the text contained a conclusion or not. Combining delayed recall data from students and study of two texts, a clear relationship between students' approach and their learning outcome was again found (see Table 2).

Table 2  Relationship between approach and outcome for delayed recall of two texts

<table>
<thead>
<tr>
<th>Approach</th>
<th>Conclusion</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holistic</td>
<td>22</td>
<td>0</td>
</tr>
<tr>
<td>Atomistic</td>
<td>12</td>
<td>25</td>
</tr>
</tbody>
</table>

Abridged from Table 2, Svensson, 1977

These students were closely followed over a year of their normal studies on a course. Their approach to their everyday studies was investigated, and it was found that 23 out of 30 studied in the same way as in the experiment. Of these 23, 10 were categorized as adopting a holistic approach in both experimental and normal studies and 13 were categorized as adopting an atomistic approach in both studies. Of the 10 adopting a holistic approach, 9 passed the course. Of the 13 adopting an atomistic approach, only 3 passed the course. Again, despite the small numbers in the study (enforced by the methodology employed) there were very clear-cut results. It is important to notice that such clear-cut results are in marked contrast to the very weak relationships that have been found between study skills inventory scores and performance.

Svensson also examined the relationship between the numbers of hours students spent per week, whether they revised for the examination, and what sort of study techniques they used. By making four dichotomous decisions about each student (holist/atomist; greater or less than three hours study a week; revised/did not revise; elaborated or restricted study technique) he was able to predict correctly the exam outcome of twenty-nine of the thirty students in the study. However, unlike those advocating a 'study skills' explanation of such findings, he understands the relative diligence and study techniques of students in relation to their approach, not as isolated, technical skills. Adopting an atomistic approach brings with it problems — study becomes boring and revision is very hard to undertake in a productive way. And in fact for those
was signified. These two categories of approach have been labelled 'surface approach' and 'deep approach' respectively.

But to what extent are these descriptions of level of approach a fixed characteristic of the students? It has been a common practice in quantitative studies of the approaches students take to their studies (for example, Witkin's studies of field-dependence/independence, e.g., Witkin et al. 1977) to look for consistencies among students' behaviour and to attribute these to some notion of cognitive style or learning style which is relatively unchanging from situation to situation, rather like a personality characteristic. Is the surface/deep distinction of this nature?

Well, some evidence of consistency certainly exists. For example, Svensson (1977) found that twenty-three of the thirty students in his study took the same approach in his experimental studies as they did in their normal studies. This sort of evidence has been used to develop a questionnaire which is intended to identify 'surface processors' and 'deep processors'. However, if one looks at learning in terms of the approach a student takes to a learning task and the learning outcome which does not make it possible for them to go about learning in any other way. Their inability to understand the distinction between a deep and a surface approach may in fact be a sign of just this.

For these students we would need to look at the way specific learning contexts were conceptualized and experienced by the students in order to understand why a surface approach is sometimes adopted.

However, there were also a number of students in Säljö's study who:

... adopt a surface approach to learning because they have a conception which does not make it possible for them to go about learning in any other way. Their inability to understand the distinction between a deep and a surface approach may in fact be a sign of just this.

So while for some there was an awareness of contextual influences, and even the possibility of choice about which approach to learning to adopt, for others:

There may not be any room for such contextual influences simply because learning is held to have one fairly obvious meaning which does not differ from one situation to another.

For these students we would need to look at their conception of learning in order to understand why a surface approach is always adopted. I shall go on to look at the distinctions different students are able to make about the demands of specific learning. But first I should like to emphasize why it is so important to understand why students sometimes adopt a surface approach.

The Göteborg group have clearly demonstrated a relationship between the approach a student takes to a learning task and the learning outcome, between students' descriptions of their own approach on the one hand and the quality of the content of their learning on the other. For example in one study (Marton and Säljö, 1976a) students were asked to read an article concerning curriculum reform in the Swedish universities. They were then asked 'Try to summarize the article in one or two sentences. What is the author trying to say, in other words?' In the article the author argued that a blanket approach to reform aimed at raising
Conception 2: Learning as memorizing

... The meaning of learning is to transfer units of information or pieces of knowledge, or what is commonly referred to simply as facts, from an external source, such as a teacher or a book, into the head.

S: To learn... well as I understand the word... sort of to listen and to get inside... acquire knowledge kind of... yes, quite simply to learn it... yes sort of to learn, to get things in one's head so they stay there.

Conception 3: Learning as the acquisition of facts, procedures, etc., which can be retained and/or utilized in practice.

Compared to the previous conceptions... some facts, principles etc. are considered to be practically useful and/or possible to remember for a long period of time, and as a consequence of this they should be learned.

S: Yes to learn so that you know it and so that you can make use of it. It shouldn't be just learning something which disappears immediately after you've learned it, but you should be able to make use of it even after a while...

Conception 4: Learning as the abstraction of meaning

Compared to the previous two categories the distinctive characteristic of this conception is that the nature of what is learned is changed. Learning is no longer conceived of as an activity of reproduction, but instead as a process of abstracting meaning from what you read and hear.

S: For me, personally, learning does not mean that you should learn all those petty details, but instead it means learning about a course of events and how things have developed, and reasoning within my subject but it does not mean sitting and memorizing trifles such as dates and such things as people do...

... the reproductive nature of learning is replaced by a conception which emphasizes that learning is a constructive activity. The learning material is not seen as containing ready-made knowledge to be memorized, but rather it provides the raw material or starting point for learning.

Conception 5: Learning as an interpretative process aimed at the understanding of reality.

This conception of learning is very similar to the previous one in the sense that the picture which is supplied in the descriptions concerning the nature of what is learning is very much the same. The reason for making a further distinction is that some subjects emphasize that an essential element of learning is that you learn should help you interpret the reality in which you live.

S: Yes, learning that means to get a sort of insight into your subject so that you can use it in your everyday life. In some ways I think I've found that you learn things twice somehow. The first time could have been at school really, the second time is the connection, I mean it becomes conscious in some way... I mean it should be related to some kind of practice. That's when you have learnt it, I think, terribly much. Then you can live... I mean you can sort of be your knowledge in some way. Then, the really important thing has happened...

Säljö highlights fundamental differences underlying these conceptions:

A prominent feature of especially the second conception described above is the idea that knowledge is external to individuals and that the process of learning essentially means a more or less verbatim item-by-item transfer of knowledge from an external source, into the heads of the learners where it is filed. In contrast the essence of conceptions 4 and 5 seems to lie very much in an emphasis on the assumption that knowledge is construed by individuals as a result of an active effort on the part of the learner to abstract meaning from a discourse and also to relate this meaning to an outside reality.

It also seems that the qualitative differences between conceptions 2 and 3 on the one hand, and 4 and 5 on the other, are very similar to the distinction between surface and deep level approaches to learning identified in experimental studies. It seems likely that the approach people adopt to learning tasks has to do with their conception of what knowledge and learning are (a similar point to that emphasized by Perry (1970)).

Those students Säljö identified who held learning 'to have one fairly obvious meaning which does not differ from one situation to another' are likely (i) not to have yet made the distinctions outlined above and (ii) to hold a conception of learning nearer to conception 1 than to conception 5. Referring back to the economics study mentioned earlier, many of the students whose understanding of economics concepts did not change over the course are likely to have adopted a surface approach to studying. That some of these students may have done this may be understood in terms of the conceptions of learning held by these students. What is crucial to the development of students as learners is that new study skills are seldom learnt and employed to any useful end without first facilitating the development of students' conception of learning. I believe this to be true on the basis of a good deal of personal experience counselling individual students about their study methods. Without first exploring and discussing what it is the student is aiming to
adoption of an atomistic approach, time commitment tailed off as the course progressed. The approach one adopts has consequences for study techniques. As I pointed out earlier, variation in technique alone accounts for very little variation in learning outcome. Study techniques are thus seen as having functional relationships with students' approach. There is further support for these conclusions in similar studies elsewhere (e.g. Goldman, 1972; Biggs, 1976).

... to sum up it would appear that a decisive factor in non-verbatim learning, both in experimental settings and in everyday work, is the learner's approach to learning.

(Marton, 1975)

What is it that underlies a student's approach to learning? One member of the research group at Göteborg, Roger Säljö, has concerned himself with this question, and with the differences between students. In particular he has attempted to describe the different ways in which students conceptualize learning. When he asked ninety people (Säljö, 1978, 1979b) if as wide a variety as possible, about their conceptions of learning, he discovered that for some the phenomenon of learning in itself had become an object of reflection, whereas for others it had not. For some, learning was something which could be explicitly talked about, discussed, consciously planned, and analysed. For others, it was taken for granted. He found that students take three main 'steps' in the development of their reflection about learning. They make the following three distinctions:

1. The first of these distinctions concerns subjects reporting themselves as becoming aware of the influence of the context in learning about what you should learn and how you should set about it. Thus, subjects report that at some time or another they started to try to adapt their learning to various kinds of demands (e.g. teachers, tests, etc.). This is of course the perspective described by, for instance, Snyder (1971) and Müller and Parlett (1974) and, to follow the terminology suggested by the last two researchers, this distinction implies that subjects somehow become 'cue-conscious', i.e. they become aware of the implicit rules governing learning in a school context. Whether or not subjects decide to adapt their learning to these rules is a different problem. The main thing is, however, that they become aware of such demands.

2. The two remaining distinctions are more closely linked to the activity of learning as such. The first of these refers to a distinction between learning 'for life' versus learning in school. Quite a large proportion of the subjects make this distinction, the essential nature of which seems to be that learning in school is perceived of as an activity which, to a too large extent, has become stereotyped and routine, guided only by the needs and principles of schools themselves. Learning in school is thus held to be a particular activity whose prime feature is artificiality in the sense that it is not perceived of as being organically related to anything outside the school situation. Many of the subjects who analyse learning in school on the basis of this distinction are consequently very negative and critical. However, for our present purposes it may suffice to say that the discovery of this problematic nature of learning in educational contexts seems to many to serve as a step through which learning becomes thematized.

3. Perhaps the most interesting distinction in the present data concerns the fact that at certain points subjects report themselves as having started to think about the nature of what is learned or, following the terminology of Colaiazzi (1973), the nature of the learned content. This distinction is introduced by the subjects themselves as that between either learning and real learning, or even more commonly, as that between learning and understanding.

Real learning or understanding is, in this case, contrasted with rote learning and its main feature is considered to be that it in some way involves the abstraction of meaning (cf. Colaiazzi, 1973) from learning materials rather than a mere reproduction of them. In a sense, the nature of what is learned is perceived of to be more complex and to have a more holistic nature. It is a perspective, a point of view, an interpretation, a principle, etc., rather than the plain 'facts' which subjects previously report themselves as having perceived of as what is to be learned. These facts are now seen instead as subordinated to what should really be learned, i.e. the general meaning.

Säljö (1979a) has also studied people's conceptions of learning directly by simply asking them 'What do you actually mean by learning?' Their answers revealed five rather different conceptions (these are extracts from pages 12–19).

Conception 1: Learning as the increase of knowledge

The main feature of this first category is its vagueness in the sense that what is given in the answers is merely a set of synonyms for the word learning.

S: ... it's to increase your knowledge ...  
E: ... hum ... could you say something further?  
S: ... well, you kind of start with a small bag and there is not much in it, but then the longer you live, the more you fill it up ...
...there is a tendency to believe that to orient students and to get them to adopt study techniques with purpose, all one has to do is mention purpose in passing, or simply tell students what purpose they must adopt. I hope the above has made it clear that students' orientation and understanding of purpose are deep-rooted, fundamental aspects of their approach to learning tasks, which change slowly and with difficulty, and which can bring about disorienting consequences when they do develop and change. They are also not simply 'important things to bear in mind' but prerequisites for development. As I earlier quoted Perry (1959) as stating: 'Until... students revise their sense of purpose... an increase in effort is likely to produce only worse results.' And students need to develop a more sophisticated conception of learning or a more sophisticated epistemological stance in order to revise their sense of purpose.

CHAPTER 6

How can students' development be facilitated?

The practical strategies for teaching students to learn which I advocate in this book can be deduced partially from the previous two sections. I believe that telling students how to learn is not often justifiable or effective, and I believe that developments in students' fundamental conceptions of learning underlie developments in their practical studying behaviour. But linking these two beliefs and providing a rationale for my strategies is a broader set of beliefs concerning how people develop and change, how they learn at all, rather than beliefs specifically concerned with studying. These beliefs are based largely in constructivist notions (e.g., the personal construct theory of George Kelly, 1959) and in humanistic psychology (e.g., Carl Rogers's notions concerning learning, Rogers, 1969). Without labouring the point, I believe people construct their own worlds. New constructions, new understandings and ways of seeing things, are based on existing constructions and ways of seeing things. I do not see how a person's understanding can significantly develop without involving their existing conceptions, however crude and 'wrong' these are. Also I see significant learning as involving a degree of disorientation and personal threat, and requiring personal autonomy and responsibility from the learner. I am bothering to make these points here because some strategies for helping students to develop as learners are explicitly, or implicitly, based on behavioural models (usually rooted in animal learning theory); on training models (usually rooted in motor skill acquisition theory); or even on models of memory (rooted in the study of the acquisition of unrelated words). This is not merely an academic and esoteric point. It has direct implications for the practical steps one takes when working with students, and I should like to elaborate on these implications.
achieve by taking notes/reading/writing an essay/revising or whatever, my suggestions concerning techniques have usually been utterly futile. And by and large, unless I can somehow bring about a reconceptualization of the nature of the exercise that they are involved in instudying, then the scope for my bringing about any useful change in their studying is extremely limited. When I have been able to bring about such a reconceptualization, the scope for the adoption of new techniques (in an appropriate way) has been dramatic and exciting.

A second framework for conceptualizing the way students change is offered by Perry (1979). For twenty years Perry ran the Bureau of Study Counsel at Harvard University. Initially running study skill courses, he moved towards individual study counselling based around an understanding of students' stage of development. This understanding is based on an extensive and prolonged interview study of Harvard students. Here Perry illustrates his 'scheme of intellectual development' with a brief example:

Let us suppose that a lecturer announces that today he will consider three theories explanatory of — (whatever his topic may be). Student A has always taken it for granted that knowledge consists of correct answers, that there is one right answer per problem, and that teachers explain these answers for students to learn. He therefore listens for the lecturer to state which theory he is to learn.

Student B makes the same general assumptions but with an elaboration to the effect that teachers sometimes present problems and procedures, rather than answers 'so that we can learn to find the right answer on our own'. He therefore perceives the lecture as a kind of guessing game in which he is to 'figure out' which theory is correct.

Student C assumes that an answer can be called 'right' only in the light of its context, and that contexts, or 'frames of reference' differ. He assumes that several interpretations of a poem, explanations of a historical development, or even theories of a class of events in physics, may be legitimate 'depending on how you look at it'. — He supposes that the lecturer may be about to present three legitimate theories which can be examined for their internal coherence, their scope, their fit with various data, their predictive power etc.

Whatever the lecturer then proceeds to do ... these three students will make meaning of the experience in different ways . . .

Perry in fact described nine stages of development through which students progress from an extreme absolutist position, through relativism to a flexible commitment, but the three, labelled A, B and C in the example quoted here, indicate the broad variation to be found. What students understand to be demanded of them in a learning situation will be dependent on the limits of their intellectual development and so delimit how they will tackle learning tasks. This is not simply an esoteric scheme, it is easily applicable. For example, while researching at the Open University, interviewing students studying the Foundation School Science course, D101, I encountered a clear example of a 'B' type student. This student had taken Technology courses to fill his degree profile, and was taking D101, as his second Foundation course requirement, as his last course before graduating. His Technology courses had evidently not disturbed his fundamental absolutism. He recognized that D101 was examining, for example, a variety of possible explanations of crime, but complained bitterly that in the end the course did not tell him what the cause of crime was. An absolutist stance such as this is disastrous for a social science student and completely overrides any significance the study techniques he adopted might have had. It determined what he wrote in his notes, for example, regardless of his note-taking technique.

In Perry's study he reported transcripts of interviews with students which demonstrated that students become increasingly aware of the epistemological stance they have adopted, and even aware of the next step they must take and of the disturbing consequences for the coherence of their ideas which such a step must inevitably involve. I have encountered one such student in the same D101 study mentioned above. This student explained that he had always taken a critical and relativistic approach to TV documentaries, serious newspaper articles and so on, but had held Open University material in awe and had simply 'learnt' all the explanations of the causes of crime in D101 without any distinction. They were all equally correct in his eyes. One had no way of choosing. However, during the summer school he had had to play the role of juror in a simulated rape trial, and in order to decide on the guilt of the accused he had had to come off his totally relativist fence and move towards some commitment to one explanation rather than another. He had recognized the significance of this change of stance and described to me how his approach to the course material would change as a consequence. Details of his general study habits remained quite unchanged and were by and large irrelevant to what he actually did with the ideas in the course.

Perry's study counselling has been centrally concerned with students' intellectual and ethical development rather than with study techniques. In his time at Harvard he has seen the intellectual stage at which students enter Harvard become more advanced — a phenomenon he attributes to increasingly relativistic teaching in schools and increasingly authoritative presentation of knowledge and teaching methods.
for students to examine their existing methods and set out new methods without personal risk. Evaluating students’ study methods or their outcomes can obstruct their development.

Emphasizing purpose, rather than technique

This is simply what I argued for above. The emphasis should always be on what study methods are for rather than merely on the steps to take to use them. What they are for involves the student’s overall orientation, conception of learning and stage of intellectual development, and these influence the perceived demands of learning tasks. Techniques should be seen as ways of meeting these demands.

Emphasizing reconceptualization of study tasks

As I argued above, the most important changes which take place as students develop are changes in the way learning is conceptualized and in the epistemological stance taken. Working within a student’s existing stage of development allows a certain limited scope for greater efficiency, but often only a broad reconceptualization of what a study task is about will provide scope for significant development. There is little point in teaching a student to go about essay writing in a thoroughly organized and efficient manner if, overall, the student takes a surface approach from an absolutist intention to reproduce the ‘right’ answer.

Emphasizing students’ awareness

I have argued that students become more aware about learning in various ways. They become able to reflect on it, and to recognize and distinguish between various different demands made on them by learning tasks. Above everything else, it is the encouragement of students’ active reflection about their studying which is the cornerstone to their development. Simply adopting a new technique will be to little avail if it is not accompanied by the student actively thinking about what he is trying to do with it when it is applied. Sophisticated and inept learners may be almost indistinguishable in terms of their observable study habits. Neither may appear organized. Their notes may look equally haphazard, their essay plans entirely missing. But the sophisticated student will be able to explain the process and purpose underlying his apparently hopeless study methods, while the inept student will be able to say practically nothing about his.

Awareness and reflection are not merely symptoms of developments in learners, they bring about the developments. It is through engaging students in reflecting upon the process and outcomes of their studying that progress is made. Passively following advice results in little such reflection, and so little improvement.
Taking a student-centred approach

I have been trying for a student-centred approach of some sort ever since the first didactic study skill courses I ran were a disaster. Students start off not as complete blanks, as *tabula rasa*, but with habitual ways of going about reading, writing and discussion, and they develop from and change these ways slowly and with difficulty. They do not adopt entire new approaches wholesale. Conceptions of what learning and studying involve are usually deep-rooted, often based in powerful experiences from school. It is these conceptions which form the framework for the way techniques are adopted and employed. Unless existing habits and conceptions are taken into account, little of significance will occur.

Also the students themselves are in the best position to judge the appropriateness and value of new techniques. Whether a technique suits an individual, whether it meets the demands of the learning tasks, and whether it can be used appropriately given the present level of understanding of learning and level of intellectual development of the individual can only be decided by the individual himself. Our job is to help the individual make the decision.

Giving responsibility to the student

Improvements in studying do not take place only during study skills courses and at no other time. They take place at any and all times during studying and when expert advice is not available. Developing as a learner is a continuous process, and unless the student takes responsibility for this process — for becoming aware of how he is learning and noticing what works and what does not — then change will be impeded. Instead of making students dependent on expert advice and evaluation, self-evaluation and self-awareness should be encouraged. Only when students can see for themselves what the advantages and disadvantages of different ways of going about a study task are is development likely.

There is a tendency to carefully explain to students exactly what is good and bad about some notes or an essay, when in fact they are perfectly capable of judging for themselves. Students are often surprised when they realize they already have plenty of criteria available to them to judge essays, and even more surprised when they discover that their criteria are very similar to their tutor’s. In the past they have simply not been in the habit of applying these criteria to themselves, but have left all judgements to teachers. Helping students to judge their studying for themselves is a crucial aspect of helping them to develop as learners.

This emphasis on personal responsibility is based in Carl. Rogers’s principles of learning:

Learning is facilitated when the student participates responsibly in the learning process. When he chooses his own direction, helps to discover his own learning resources, formulates his own problems, decides his own course of action, lives with the consequences of each of these choices, then significant learning is maximised.

Independence, creativity and self reliance are all facilitated when self-criticism and self-evaluation are basic.

(Rogers, 1969, pp. 162-163)

Making change safe

Studying, and especially assessment, can be very threatening to students. Flexible and effective ways of studying can involve risks. Fransson (1977) has demonstrated experimentally that students who were made highly anxious by a test approached their study in a ‘surface processing’ way and made ineffective, reproductive attempts to answer the test questions. He concluded: ‘If deep level processing is valued, every effort must be made to avoid threatening conditions...’ This is obviously not a new discovery. Dewey (1913) discussed this effect seventy years ago and the role of threat in inhibiting meaningful learning is a central theme in Carl Rogers’s ‘principles of learning’ (1969), including his fifth principle: ‘When threat to the self is low, experience can be perceived in differential fashion, and learning can proceed.’ Similarly, analysis of the motivation of students to study suggests that limited, inflexible and surface processing approaches to learning are common among students motivated by a fear of failure (Entwistle and Wilson, 1977; Biggs, 1977).

Under threat we sometimes regress to cruder ways of seeing things which we have employed at an earlier stage in our understanding. Perry (1977) has observed that: ‘...a student, as he loses confidence in himself, tends paradoxically to fall back on less and less productive methods of learning’ (p. 123). Similarly, Perry (1970) has described how students revert to earlier stages in their intellectual development when their ideas are under threat. It has always seemed to me that it is exactly those students who are most in need of a more flexible approach to their learning and who feel least secure in their existing approaches who are most deeply entrenched and least likely to change.

Any attempt to help students to develop must provide a safe context
working alone

If the discussion is to be rooted in individual student’s experiences of relevant learning tasks rather than in generalizations, then it should start with some attempt at accessing student’s experience. This can be done either by asking students to think back to particular experiences (e.g., ‘the last tutorial you had which was particularly dreadful’), by using various cued recall procedures (e.g., using actual notes taken from a recent lecture to help reconstruct the experience of the lecture) or by providing students with a new and immediate experience (e.g., by requiring them to take notes from a short lecture or article and using these notes as a subsequent focus of discussion). Before discussion of such an experience is begun it is extremely helpful to students to give them time to work up some ideas of their own about it. Many students have difficulty contributing to conventional unstructured discussions. In them, by the time they have thought out what they want to say the focus of the discussion has moved on. Its focus is therefore dominated by the quicker thinking and more confident students, and tends therefore to be concerned with topics other than those with which the silent students are concerned. These students become increasingly disengaged from the discussion, coming to believe that their own ideas are irrelevant. If students are given a short while to think about, and perhaps write down, a couple of things which concern them about the topic this can give them a clearer idea of what they have to say, and a record of it. This can give them more confidence when they come to contribute to later discussion.

The emphasis I have put here on confidence is important. Inexperienced students tend to have very few ideas about how they study, little language to express these ideas, and little confidence in them. In fact it is crucial to define the initial task at this stage in a way that engages students and makes them feel they have some ideas about it, and that their ideas are not hopelessly inadequate. Asking a few straightforward questions and suggesting a few straightforward answers about the topic this can help. For example, if students to look at their notes and to think about them, you might ask: ‘Are there parts you feel are very adequate and full enough to make sense of and be useful afterwards, while other parts are too sketchy and unclear to be useful? Why is this? How come you wrote such a sketchy bit of notes? Perhaps you didn’t understand something, perhaps you just decided it wasn’t important, or perhaps you were writing down so much you got behind. Which parts of your notes are you happy with, and which are you unhappy with, and why? Spend five minutes on your own before we go on to discuss note taking.’

It is also possible right at the start, to focus on the purpose of some learning activity students have engaged in. For example, it is perfectly feasible simply to ask: ‘Why did you take these notes at all? What were you hoping they would do for you?’ — and suggest a couple of possible reasons. But questions about purpose are harder for students to answer — purpose may never have been considered or is taken for granted — and you may need to give more help and more time, and clear and engaging instructions for students to have anything to say after they have worked alone.

Working in pairs

There are a number of good reasons for asking students to work in pairs rather than to move straight into an open group discussion.

First, it is very much easier to speak in a pair than in a group — in fact it is almost impossible not to speak. When ideas are at a very early stage of development the tolerance for ambiguity of meaning and safety from public ridicule (or even being seen to be in a minority) make the exploration and cautious negotiation that is necessary much more likely. Dominant students tend to dominate less, and shyer students can practise and develop their ideas to a point where they are confident enough to try them out in a larger group at the next stage.

Second, it helps to highlight the important aspects of a student’s particular way of studying to compare and contrast it with just one other person in some detail. Too much variation at this stage can confuse and obscure differences and lead to a hurried and superficial analysis before ideas have been worked out clearly.

Third, because about half the people in the room will be talking simultaneously at this stage, there is a busy atmosphere and buzz of discussion. This helps make each individual pair anonymous and able to talk without worrying about being overheard. This atmosphere can be enormously facilitative compared with the strained quiet atmosphere common at the start of large group discussions. It encourages participants to get stuck in quickly and confidently.

It can help to give a clear task orientation at this stage to focus pairs’ discussion. An easy way to do this is to ask each pair to sort something out between them so that they are agreed on something to take with them to the next stage of the discussion. It can be embarrassing to arrive at the next stage, in groups of four or six, and not have anything to contribute, and so pairs tend to take responsibility for working to make sure they have something to contribute. The absence of a tutor in these discussions encourages this personal responsibility. A task
CHAPTER 7

Why use structured group exercises?

The beliefs I expressed in Chapter 5 concerning how people develop as learners can lead to a variety of activities which can be helpful to students. They can be embodied in certain forms of one-to-one study counselling and packaged or distance-learning materials, and they can also be embodied in unstructured group sessions. In certain circumstances I think all these alternatives can be useful, but I would like to explain briefly why I have not proposed them here.

One-to-one study counselling can be extremely effective. As well as being the chosen mode of operation of William Perry at Harvard, to whom I have referred several times, there are two somewhat differing models of such help in Britain. Both Wankowski (1979) and Main (1980) have developed and described useful ways of counselling students which embody at least some of the above beliefs. However, such counselling makes enormous demands on the counsellor's facilitative skills if the student is not to be overwhelmed and intimidated by expertise. It is also extremely time consuming. I have found it can take me an hour or so simply to understand enough about the way a student is studying to be able to start working on helping the student to change. And regular counselling meetings between a student's attempts to change everyday habits may be necessary if counselling is not to be seen by the students as an interesting one-off experience unconnected with the everyday activities of studying.

Written materials can also be produced to embody these beliefs. However, examining students' learning habits in a way relevant to their studies involves actual learning and materials would have to include, or be written around, learning materials which are either part of the student's current course, or which are similar in content and the demands they make on the student. A 'learning to learn' manual could be written around a set book for a course, for example, and including reading, note-taking and writing tasks based on the set book. The effort involved in writing such a manual, however, would probably be practical only if the potential audience for the particular course justified it. If student numbers are not large, then methods are needed which are more flexible to the specific demands of courses and students. Interactive group exercises are both flexible and economical of teachers' time.

To bring about student-centred self-directed learning, it is conventional to use unstructured groups and open, undirected discussion. However, this sort of group many people find very difficult to handle. For the tutor the lack of control may not be felt to be either desirable or possible to achieve given conventional expectations of students for the guidance and control of the tutor. For the students the lack of direction, unclear focus and the characteristically slow early progress of such groups may make them seem a poor investment of time. In addition the dynamics of such groups can lead to discomfort and pressure which the participants might be unwilling to tolerate for the sake of hoping to learn about their studying. Drop-out may be very high, and few tutors feel confident of handling the demanding task of group facilitator. Despite these problems, several professional student counsellors have reported to me the power of unstructured, and even leaderless, groups, once a stable group of students committed to regular meetings has formed.

The form of the structured group exercises which this book proposes overcomes many of these problems. The structure was not developed specifically for this purpose, but as an alternative to conventional tutorials. The structure involves participants starting with their own experience and ideas and progressively opening up and widening these by comparison and contrast with those of the rest of the group. It requires students to work alone, then in pairs, then in small groups of four or six, and finally in a plenary session involving the whole group and chaired by the tutor. This structure was developed by Andrew Northedge (Northedge, 1975) and is widely used as a group discussion technique for all sorts of purposes. It has several advantages: for group dynamics and the way students are able to participate actively in discussion; for the tutor and the way it reduces the demand for either facilitative skills or expertise in study methods; and for the way new ideas and ways of conceptualizing learning can be introduced while still based solidly both in students' own conceptions and experiences and in the particular learning context in which they are working.

The structure involves, in its simplest form, working through four stages.
orientation might take the form: 'Discuss the reasons you have found for parts of your notes being more or less useful to you. Are your reasons similar? Agree on the three most important reasons and take these three with you to the next stage where you will join another pair who will have their own reasons.'

Working in fours

Once groups become larger than about six they start functioning in rather different ways and progressively become less and less suitable contexts for the personal construction of meaning; for the development of ideas. Instead they become mere platforms for the articulation of the most well worked out and static ideas by the most confident, while most contribute little or nothing. The idea seems to be to increase the size of the groups, from pairs, sufficiently to introduce a variety of new ideas and new reactions to existing ideas while at the same time maintaining individual's contributions and keeping the whole business relatively safe and unthreatening.

Individuals will have worked out ideas in their pairs, and have some support from their partner to offer and discuss these ideas. Ideas cannot be 'outnumbered' in a group of two pairs and so it is much easier to raise half formed or idiosyncratic ideas which might otherwise be suppressed or ridiculed. The most constructive work gets done at this stage and about half the total time for the exercise should normally be devoted to it.

Again it can be useful to give a group orienting task to help focus discussion. Instructions can be formulated which not only help the discussion, but greatly ease the next, and final, stage as well. For example: 'Between the two pairs in your group you now have six reasons considered most important for why some parts of notes are more useful than others. Discuss these and see if they are similar or overlap. Which of them are most important? Between you agree on just three which you would like to contribute to the whole group during the plenary. You may want to modify or combine your reasons to produce your three.'

'It can help to ask each group to nominate a 'chairman' to note down the points that are agreed and to act as rapporteur during the final plenary.

The progressive opening up to a number of alternative viewpoints, ways of studying and conceptions of learning exposes students to alternatives gradually, in ways expressed in students' rather than experts' language. This is much less threatening than being confronted with an expert conception 'from cold'. Because there has been an opportunity to develop and articulate personal conceptions first, students already have available to them a way of approaching and making sense of these alternatives. This is important when it comes to pooling points in the plenary, as the overall product of the whole group may go far beyond the content of discussions of an individual pair, and yet the product will have considerable validity for the pair because they contributed towards it.

Plenary

This is really a 'reporting back' stage. Its function is to display the similarities and differences between students, and the sheer range of ideas, in public. The development of ideas within individuals may be over by this stage, though seeing others' ideas may encourage some reconceptualization. Its function is to provide a goal for the earlier discussions and legitimacy to their products; to bring to the attention of groups, areas and issues which they did not themselves discuss; to give students an opportunity to ask questions; and to facilitate the development of the students as a group.

The plenary may need fairly careful handling if the products of the students' work and discussion are not to be discounted and discredited. It is all too easy to give the impression of saying 'Well all you have said is very interesting, and not bad for beginners, but let me explain it properly for you and correct your misconceptions'. Some tutors have even told me that they use the entire structure simply as a 'softening-up exercise' before they come in with a lecture on how to take notes or whatever the topic is! The product of plenaries can, despite being based only on students' experiences, be very similar to conclusions reached by How to Study books, but even when this is not the case it is vital not to cut the ground from under students' feet. All they have to rely on as they develop as learners is their own understanding of what is demanded of them and their judgement about how to meet these demands. If they mistrust their own judgement they will not use it. If plenaries are used to demonstrate to students how poor they are at learning, the whole point of the exercise is lost.

It can be useful to elaborate on students' conclusions, to offer more coherent and articulate ways of expressing the same ideas, provided this is not seen to devalue the students' efforts. It can also be useful to question students in order to get them to clarify their own ideas. A good way to pool the outcome of discussions in fours is to ask each group of four in turn to offer one point or issue. These can
One occasion, in order to improve the way their students learnt, which teacher. Not all learning problems are the students' fault, and student-students study. If students are being given advice on how to study this aspect which feedback from teachers emphasizes most is that very few demands are made. There is no demand for great expertise in study techniques, knowledge of literature on student learning or diagnosis of study problems. Common sense and personal experience of studying seem quite sufficient. Students seem to appreciate the person running the exercise revealing strengths and weaknesses of their own studying more than an expert analysis.

There is also very little demand for group facilitative skills. Reading out clear and engaging instructions at the right time does not take much skill. Compared with running a tutorial it is extremely relaxing. I very often even leave the room in order to stop myself interfering or joining groups! Not until the plenary stage is much demand made for sensitivity and non-directive questioning skills.

A consequence of the 'non-expert' role adopted is that the person running the exercise can develop quite a different sort of relationship with students than is customary, in which both parties are jointly trying to understand what is going on in particular learning activities. This helps to transfer responsibility to students for the progress they make.

One of the 'unexpected' outcomes of these exercises, which seems enormously beneficial, is that teachers can discover some of the consequences of their teaching and curricula and how they affect the way students study. If students are being given advice on how to study this does not happen. But if a student-centred exercise is used, teachers can discover that, for example, their students are spending a disproportionate amount of time on an activity not considered important by the teacher. Not all learning problems are the students' fault, and student-centred exercises can be dramatically effective in isolating other causes of ineffective learning. I should like to give a couple of examples here to illustrate this.

I was asked to come in to a language department at a university on one occasion, in order to improve the way their students learnt, which was considered by the lecturers to be inept. One of the students' ineptitudes was considered to be that they read extremely slowly, and I was asked to train them in speed reading techniques. Instead I asked the lecturers to select an example of the sort of reading material they felt students should be reading more of, and in an exercise asked both lecturers and students to start reading the particular book chosen. After a while I simply stopped everyone and asked them to describe to each other what they had been doing and why. Students eventually formed groups of four and then reported their conclusions, and the four lecturers did the same. It emerged that the students had been reading extremely carefully. The book was a parallel text of a classic novel in the particular language, with English on one page and the language on the other. Students had been trying to identify the author's characteristic style and a wide variety of devices of literature: irony, pathos and so on. They had been trying to memorize vocabulary they did not know, and worked out grammatical forms with which they were unfamiliar. They were, without exception, reading extremely slowly. In contrast the lecturers had devoured half a chapter in the same time. It quickly emerged that the students had gained completely the wrong impression of what sort of task they had been set. The lecturers explained that they wanted students to get plenty of practice at reading the language, and had chosen the particular novel for its academic respectability, though motorbike magazines or thrillers would have done just as well. Their main concern was for sheer quantity of reading. The students had assumed that universities were concerned with more esoteric matters and were going about their reading for entirely different reasons. There was no study skill problem — only a problem of understanding the demands of a study task, and this was cleared up by making those demands more explicit.

As a second example I have chosen a situation where the diagnosed problem was identical, but the cause quite different. Again a university department in this case a Psychology department, was concerned about the study skills of its first-year students. In particular they seemed to be reading enough. The scale of this problem quickly became apparent when, in an exercise on how students actually spent their time before and after the course started, it emerged that students had actually been reading more psychology before the course started! But the cause was not far away. Three-quarters of all their time outside class contact hours was spent writing up laboratory reports! This turned out to be because laboratory reports were marked severely and the students were worried about not passing the first year. In fact there was a pass-fail entry into the second year and a student would have had to commit murder to fail, but the students did not know this. Their lack of reading
was a direct consequence of a fear of failure and their perceived demands of the assessment system. Again, apparent poor study skill was caused by teachers.

If teaching students to learn is undertaken by specialist counsellors or study skill experts — because it is seen as a very demanding teaching task — then these sorts of outcomes seldom get back to teachers and the root of the learning problem is never tackled. Only if an approach is adopted which is so easy that teachers can use it in the context of their own departments, even in their own classrooms, is it likely that they will be tackled. In every exercise I have ever run issues have arisen which were to do with constraints on students' learning over which the students had no control. To approach teaching students to learn in a way which does not bring out these issues is to ignore half the problem. Either giving advice, or using specialist agencies to undertake the task, is to ignore half the problem.

This brings me to the final point that I should like to make in this book: that you can bring a horse to water, but you cannot make him drink. Occasions will inevitably arise, if you use this approach, where your own and your students' goals in education become clarified publicly, and they are found to be profoundly different: where what you want your students to be doing is different from what they are doing and what they say they want to be doing. I have had students tell me after a series of exercises that they could now see the way they could go about studying on their course, but that they were not going to because it was not necessary to do so in order to pass their examinations.

All this approach can hope to do is to help students to be in a position where they can see and understand the learning options open to them, and where their awareness makes them free to make their own decisions as to what to do. It may take fundamental changes in the whole educational context within which students study for them to choose to study in the way you would like them to.

Selected further reading

HILLS, P. J. (Ed.) (1979) Study Courses and Counselling, Society for Research into Higher Education. This is a collection of articles written by those responsible for having developed a variety of different practical approaches to improving students' study methods in Britain. It is a somewhat partial selection, and a good deal of material has been published elsewhere, but it contains useful introductions to the use of 'contracts' with students (Goldman), to individual study counselling (Wankowski), and descriptions of several study skills courses.

British Journal of Guidance and Counselling, (1979) Vol. 7, No 1, January. This issue, of a journal which often contains useful articles on counselling students about study problems, examination anxiety, and so on, is largely devoted to different approaches to developing study methods. It contains several of the same authors as the Hills collection of articles (see above) and an article by Helweg-Larsen concerning training methods developed by Tony Buzan's Learning Methods Group to introduce patterned, or 'organic' note-taking techniques.

MAIN, ALEX (1980) Encouraging Effective Learning, Scottish Academic Press, Edinburgh. This is a handbook for teachers who do not want simply to give study skills advice but do not have any counselling skills. Its analysis of what learning consists of is very conventional and is centred around relatively mechanical study skills, though it avoids the inanities of How to Study manuals. It reviews contemporary research into student learning but makes no use of this in its
ENTWISTLE, NOEL and HOUNSELL, DAI (1975) How Students Learn,
Readings in Higher Education, 1, University of Lancaster.
A well-selected collection of articles reflecting the range of perspectives that exist on how students learn. At one end of the spectrum are the behaviourists and animal learning theorists (e.g., Skinner) applying formal psychological theories. In the middle, cognitive psychologists and information processing theorists. And at the other extreme, are humanistic psychologists (e.g., Rogers and Maslow). Articles by Marton and by Perry are particularly recommended. These articles are not directly concerned with applications of their perspectives to practical problems of student learning, but the editors give a useful overview of implications for teaching.

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A REVIEW OF THE RESEARCH OF FERENCE MARTON AND THE GOTEBOG GROUP: A PHENOMENOLOGICAL RESEARCH PERSPECTIVE ON LEARNING

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ABSTRACT

This article reviews the work of Ference Marton and his group of researchers at the University of Goteborg in Sweden. It describes and explains research into: what students learn; how students approach studying; the relationship between approach to study and learning outcomes; what students understand learning to consist of; and whether it is possible to manipulate students' approach to studying in order to influence the learning outcomes. This review is intended to build up an overall picture of learning as seen from a phenomenological research perspective.

Introduction

What distinguishes the work from the Goteborg Group is not the subject matter of their research, but the perspective from which they view the subject matter. As a consequence they have been able to describe learning in ways which have given fresh insights into what learning consists of. Rather than beginning by describing what this perspective is, this article will first review some of the research which they have undertaken from this perspective. As what they have seen looks rather different from what one sees from conventional quantitative descriptions of learning, it should become clearer that it is their research perspective which is crucial. We will then examine this perspective and its implications for educational research.

This article is not a historical account of the development of the work of the Goteborg Group. It is a review of the research in order to build up an overall picture of learning as seen from a phenomenological perspective [1].
A review of this work seems to be particularly important because
Entwistle and Hounsell (1979) have recently identified a trend towards
qualitative methodologies in research in student learning.

The Content of Learning

Relatively little research has ever attempted to describe what students
understand. Instead it tends to describe how much has been learned. Several
of the most exciting Goteborg studies have examined in detail what it is that
people understand about particular concepts. For example, they have looked
at how the concept of price is understood.

In one study individual schoolchildren were asked, in one-to-one inter­
views: “Why does a bun cost about one crown?” Examining the answers the
schoolchildren gave, they found four kinds of answers which involved the
following four kinds of conception of price:

A. Price is determined by the relationship between supply and demand
for commodities.
B. Price is determined by the value of a commodity or the accumulated
value of its constituents.
C. Price is determined by other properties of commodities than value
such as taste, shape, size, etc.
D. Ignorant answers (e.g., “I like buns”).

As Dahlgren points out (Dahlgren, 1979a) these categories of answers
are qualitatively different.

The difference between A and B can be described in terms of whether the price is
conceptualised in system oriented terms (which is more dynamic and abstract) or
whether it is regarded as a property of a commodity (which is both more static
and concrete).

The distribution of answers amongst these categories for children at different
school grades is given in Table I.

As can be seen, what children understood varied with their school grade.
It did not only vary with their school grade, however, it varied according to
the way the question was asked. The same children were also asked: “Why
does a bicycle cost more than a ball?” and: “Why does a diamond ring cost
more than a bicycle?” As might be imagined, the children’s “best” answer to
these questions was considerably better than that for the first question (see
Table II in comparison with Table I).

Does this mean that by clever questioning, it was possible to teach the
TABLE I

Distribution of Students' Answers to: "Why does a bun cost about one crown?"

<table>
<thead>
<tr>
<th>Category</th>
<th>School grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nursery 2nd 4th 6th</td>
</tr>
<tr>
<td>A</td>
<td>0 0 1 1</td>
</tr>
<tr>
<td>B</td>
<td>3 18 25 27</td>
</tr>
<tr>
<td>C</td>
<td>8 6 2 2</td>
</tr>
<tr>
<td>D</td>
<td>19 6 2 1</td>
</tr>
</tbody>
</table>

1 Groups of 30 students in each grade.

TABLE II

Distribution of Students' Best Answers About the Concept of Price

<table>
<thead>
<tr>
<th>Category</th>
<th>School grade</th>
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<tbody>
<tr>
<td></td>
<td>Nursery 2nd 4th 6th</td>
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<td>A</td>
<td>0 6 14 17</td>
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<tr>
<td>B</td>
<td>24 23 15 13</td>
</tr>
<tr>
<td>C</td>
<td>5 1 1 0</td>
</tr>
<tr>
<td>D</td>
<td>1 0 0 0</td>
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</tbody>
</table>

1 Groups of 30 students in each grade.

children a more sophisticated conception of price? No, it does not. When they had finished asking these other questions they again asked the children: "Why does a bun cost about one crown?" The children's answers were very much like their original answers to this question (with the exception of a large increase in ignorant answers for 2nd grade children). In other words what the children understood depended on the context (or question).

This variation in children's conceptions across different contexts or tasks is becoming recognised by psychologists as the norm rather than the exception (e.g., Donaldson, 1978). This is contrary to Piagetian views that conceptions are stable across all contexts, within a particular developmental stage. This emphasis on the context dependency of learning is heavily emphasised throughout the Goteborg research (cf. Marton, 1978, Svensson, 1979). It has some crucial implications for the study examined below.

Dahlgren (1978a, b, 1979b) has also examined students' understanding
of the concept of price in the context of a University Economics Course. This was a one-term economics course for freshmen. At the start of the course, the students were asked, in in-depth interviews, ten everyday questions about economics which could be understood by people in the street (e.g., about cost, money, inflation). At the end of the course, fifteen out of eighteen students accumulated enough marks to pass their exam, but what did they understand about economics concepts? Before the course, of thirteen students, six gave answers revealing the type A conception of price described above (price as a relationship between supply and demand) and seven gave answers revealing the type B conception (price as the value of the commodity). After the course, only four gave type A answers. Three of the six who initially gave type A answers ended up giving type B answers. It should be remembered that the nursery school children often held this type B conception! This is hardly a very impressive picture of the impact of the economics course on the understanding of economics concepts achieved by the students! Also, it is a completely different picture than that given by a quantitative assessment. For one examination question concerned with the relationship between production resources spent and production outcome, 89% of the students gave quantitatively acceptable answers, i.e. they scored sufficient marks to pass the question. However only 26% and 47% gave qualitatively acceptable answers to direct interview questions concerning the concepts involved in this relationship (Dahlgren, 1978b). While these are two quantitative measures we are comparing here, they are of a special form. The conventional quantitative measure is of the proportion of students who exceed a quantitative criterium and pass the question. Students can exceed this criterion by accumulating enough marks, to some extent independently of the quality of their understanding. Dahlgren’s quantitative measure is of the proportion of students who exceed a qualitative criterion. The main difference between these two measures is highlighted by the qualitative changes which took place in the students’ answers. The main differences between students’ verbal answers to the ten everyday economics questions before and after the course was in terms of use of new economics terminology to describe the same conception. The use of this terminology was sufficient to accumulate sufficient marks to exceed quantitative criteria. By looking at the content of learning, in the student’s own terms, a strikingly different impression of the effects of the economics course had been gained.

One additional aspect of such an analysis of the content of learning has been descriptions of the fate over time of what is learnt. Ever since Ebbinghaus (1885) it has been assumed that what is learned “disappears” rather rapidly over time unless drastic steps are taken to prevent this. This conception of forgetting is a consequence of a quantitative measure of learning. In numerous studies at Goteborg the long-term consequences of studying a text have been examined in terms of the content (rather than the
quantity) of what is learnt. This is rather in the tradition of Bartlett (1932) (cf. Dahlgren, 1975; Marton and Saljo, 1976a, b; Marton and Wenestam, 1978). The main characteristics of change over time have been found to be: (i) an erosion of the quality of students' conceptions and (ii) a relative stability, e.g. "... the main feature of change in the retention of the outcome of non-verbatim learning is not disappearance but distortion"; and "... the change, at group level, over a period of about 45 days is almost negligible ...", "... we can note a remarkable stability in the answers. Actually there is a considerable variation in the words used by the subjects to express their answers on the two occasions but the basic structure of the answer given on the immediate measurement is in almost 50 per cent of the cases ... repeated after a 45 day interval" (Dahlgren, 1975: 133).

Students' Approaches to Learning

Why were the learning outcomes in Dahlgren's studies so disappointing? What variation in learning process is there that corresponds to the variation in learning outcome observed? In both experimental studies and in the context of everyday studying, the ways students experience studying has been examined by the Goteborg Group. In experimental studies (e.g. Marton and Saljo, 1976a) students have been asked to introspect about their experience of reading a text. It has emerged that students' descriptions are of two rather different sorts. In one sort, students described their approach in the following way:

Well, I just concentrated on trying to remember as much as possible.

I remembered ... but, I'd sort of memorised everything I'd read ... no, not everything, but more or less.

It would have been more interesting if I'd known that I wasn't going to be tested on it afterwards, 'cos in that case I'd've more, you know, thought about what it said instead of all the time trying to think now I must remember this and now I must remember that.

In the other sort of description, students said:

... I tried to look for ... you know, the principal ideas ...

... and what you think about them, well it's you know, what was the point of the article, you know ...

No, I ... tried to think what it was all about ...

... I thought about how he had built up the whole thing.
This sort of difference of approach they have repeatedly encountered in different studies, and it has also been clearly evident in three rather different studies in British Universities (Laurillard, 1979, at Surrey University; Ramsden, 1979, at Lancaster University; and Morgan et al., 1980, at the Open University).

It is important to note that this is not simply a quantitative difference in a variable such as motivation or attention. It is a qualitative difference in level of approach. In the first sort of description students have the discourse itself, the sign, as a focus of attention, and in the second sort of description students were concerned with what the discourse was about — what was signified. These two categories of approach have been labelled “surface approach” and “deep approach” respectively.

Parallels have been drawn in the literature (e.g. Ford, 1979) between Craik and Lockhart’s (1972) “levels of processing” approach to the study of memory and Marton’s descriptions of levels of processing. This is a misconceived parallel. All the processing Marton describes would be at the deepest level of Craik and Lockhart’s hierarchy of levels. What Marton has described is a qualitative variation within what cognitive psychologists call the semantic, or deep level, domain of processing.

But to what extent are these descriptions of level of approach a fixed characteristic of the students? It has been a common practice in quantitative studies of the approaches students take to their studies (for example, Witkin’s studies of field dependence/independence, e.g., Witkin et al., 1977) to look for consistencies amongst students’ behaviour and to attribute these to some notion of cognitive style or learning style which is relatively unchanging from situation to situation, rather like a personality characteristic. Is the surface/deep distinction of this nature?

Some evidence of consistency certainly exists. For example Svensson (1977) found that 23 out of the 30 students in his study took the same approach in his experimental studies as they did in their normal studies. This sort of evidence has encouraged the Lancaster University research group (Entwistle et al., 1979) to develop a questionnaire which attempts to identify the extent to which students, overall, take a “surface” or “deep” approach to their studies. However if one looks at learning in specific contexts, and asks students, one gets a rather different picture of the nature of the surface/deep distinction.

Firstly, Laurillard (1979) at Surrey University, has shown that students will take a surface or deep approach to a task depending on the nature of the task. She required students to “teach back” to her material which they were studying on their science course. The variation in students’ approaches become apparent when the specific content and context of the learning was examined.

Secondly, Roger Saljo (1979a) introduced the notions of surface and
... a clear majority of subjects participating in this study recognise the dichotomy between a deep and surface approach and they can furthermore relate their own methods and procedures of learning to this perspective. A surprising result, however, is the finding that very few describe themselves as belonging exclusively to either of these categories. Rather, the general attitude among 61 out of the 72 subjects, who described their own learning in the perspective outlined in the text used as learning material, is that they consider both of these approaches to be applicable to their own learning... the subjects perceive their approach to learning as being contextually dependent.

For these students one would need to look at the way specific learning contexts are conceptualised and experienced by the students in order to understand why a surface approach is sometimes adopted.

However, there were also a number of students in Saljo’s study who:

... adopt a surface approach to learning because they have a conception which does not make it possible for them to go about learning in any other way. Their inability to understand the distinction between a deep and a surface approach may in fact be a sign of just this.

So while for some there was an awareness of contextual influences, and even the possibility of choice about which approach to learning to adopt, for others:

There may not be any room for such contextual influences simply because learning is held to have one fairly obvious meaning which does not differ from one situation to another.

For these students one would need to look at their conception of learning in order to understand why a surface approach is always adopted.

The Goteborg group have looked at both the characteristics of learning contexts as experienced by students, and the conceptions of learning held by students, in relation to the approach students adopt to their learning.

Approach to Study and Learning and Outcomes

The Goteborg group have clearly demonstrated a relationship between the approach a student takes to a learning task and the learning outcome. Such relationships have been demonstrated in many studies of the effects of so-called “mathemagenic” activities, but here the relationship is between students’ descriptions of their own approach on the one hand and the quality
of the content of their learning on the other. For example, in one study (Marton and Saljo, 1976a) students were asked to read an article concerning curriculum reform in the Swedish Universities. They were then asked "Try to summarise the article in one or two sentences. What is the author trying to say, in other words?" The author argued that a blanket approach to reform aimed at raising pass rates was misguided, and that selective measures should be taken which concentrated on particular categories of students. It was found that students' answers fell into four categories:

A. Selective measures were to be taken, i.e. only for particular categories of students.
B. Different measures were to be taken for different groups.
C. Measures were to be taken.
D. There are differences between groups.

These students were also asked to introspect concerning the way they had gone about reading the article, and their comments categorised in terms of the distinction described above i.e. surface/deep approach. The relationship between the approach students took and what they learned can be seen in Table III.

It is clear that the approach students took to reading was very important. None of the students who described their approach in terms categorised as a surface level approach completely understood the author's argument, while none of the students who took a deep approach failed to gain a good understanding.

Further work at Goteborg (Svensson, 1976, 1977 and Saljo, 1981) has shown that the relationship between approach and outcome exists in everyday studies as well as in experiments. In an experiment Svensson (1977) found students adopted one of two different approaches. Students who adopted what he calls an "atomistic" approach focussed on specific comparisons in a

<p>| TABLE III |
| Relationship Between Approach and Outcome (Sample of students = 30) |</p>
<table>
<thead>
<tr>
<th>Level of approach</th>
<th>Level of outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface</td>
<td>A</td>
</tr>
<tr>
<td>Not clear</td>
<td>0</td>
</tr>
<tr>
<td>Deep</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>
text, focussed on the parts in sequence, on memorising details, and lacked an orientation towards the message as a whole. In contrast, students who adopted what he calls a “holistic” approach focussed on understanding the overall meaning of the text, searched for the author’s intention, etc. (These categories are clearly similar to the surface/deep distinction.) Students were categorised according to which approach they described themselves as adopting, and also according to whether their recall of the texts included a conclusion or not. A clear relationship between students’ approach and their learning outcome was again found (see Table IV).

These students were closely followed over a year of their normal studies on a course. Their approach to their everyday studies was investigated, and it was found that 23 out of 30 studied in the same way as in the experiment. Of these 23, 10 were categorised as adopting a holistic approach in both experimental and normal studies and 13 were categorised as adopting an atomistic approach in both studies. Of the 10 adopting a holistic approach, 9 passed the course. Of the 13 adopting an atomistic approach, only 3 passed the course. Again, despite the small numbers in the study (enforced by the methodology employed) there is a clear relationship between outcome and approach.

Svensson also examined the relationship between the numbers of hours students spent per week, whether they revised for the exam, and what sort of study techniques they used. By making four dichotomous decisions about each student (holist/atomist; greater or less than three hours study a week; revised/didn’t revise; elaborated or restricted study technique) he was able to correctly predict the examination outcome of 29 of the 30 students in the study. However, unlike those advocating a “study skills” explanation of such findings, he understands the relative diligence and study techniques of students in relation to their approach, not as isolated, technical skills. Adopting an atomistic approach brings with it problems — study becomes boring and

<table>
<thead>
<tr>
<th>Approach</th>
<th>Conclusion</th>
<th>No conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holistic</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>Atomistic</td>
<td>5</td>
<td>11</td>
</tr>
</tbody>
</table>

1Source: Svensson, 1977: Table I.
revision is very hard to undertake in a productive way. And in fact for those adopting an atomistic approach, the amount of time devoted to study tailed off as the course progressed. Study techniques are thus seen as having functional relationships with students approach. There is further support for these conclusions in similar studies elsewhere (e.g. Goldman, 1972; Biggs, 1976).

... to sum up it would appear that a decisive factor in non-verbatim learning, both in experimental settings and in everyday work, is the learner's approach to learning (Marton, 1975a).

If this is so, a crucial issue which arises is whether it is possible to influence students' approach to learning or their conception of the learning task in order to improve learning outcomes. A number of studies have examined this issue, and these studies are of particular interest as they have something to say about the general use of objectives, in-text questions and other mathematic devices. Is the fashionable use of these devices likely to be associated in any way with the approach students adopt to studying from text? This question will be tackled below, but first students' conception of learning will be examined.

Students' Conceptions of Learning

Saljo (1979b) has suggested that:

If one were to ask a number of people, educational researchers as well as laymen, to set up an experiment which would decide who of a given group of persons is the best learner, the chances are probably quite large that this experiment would be designed to tell us who could learn most "units of information" in a given period of time or who could learn a given amount of material most quickly. What I am trying to say is that my guess is that to most people the statement "being better at learning" has a purely quantitative meaning and consequently the decision as to who of a number of persons is the best learner is seen as a question of "how much" and/or "how fast". Similarly, should one agree to the initial statement about the relationship between practice and performance within this perspective on learning, it would imply that practice on one way or another would imply an increase in the capacity to absorb information.

This perspective on learning which seems natural and self-evident to many is, however, only a perspective, or rather, one perspective. It is a perspective which is taken for granted in most studies on learning, and empirical research which is carried out within this main-stream frame-work never has to include any justification of e.g. why differences between people with respect to learning are described the way they are, i.e. in terms of "more" or "less". Nevertheless, I should like to argue that there are alternative ways of conceptualizing the phenomenon of learning leading to different approaches in empirical research.
When he asked 90 people (Saljo, 1979b, 1979c) of as wide a variety as possible, about their conceptions of learning, he discovered that for some the phenomenon of learning in itself had become an object of reflection, whereas for others it had not. For some, learning was something which could be explicitly talked about, discussed, consciously planned, and analysed. For others, it was taken for granted. He found that students take three main "steps" in the development of their reflection about learning. They make the following three distinctions:

1. The first of these distinctions concern subjects reporting themselves as becoming aware of the influence of the context in learning about what you should learn and how you should set about it. Thus, subjects report that at some time or another they started to try to adapt their learning to various kinds of demands (e.g. teachers, tests, etc.). This is of course the perspective described by, for instance Snyder (1971) and Miller and Parlett (1974) and, to follow the terminology suggested by the last two researchers, this distinction implies that subjects somehow become "cue-conscious", i.e. they become aware of the implicit rules governing learning in a school context. Whether or not subjects decide to adapt their learning to these rules is a different problem. The main thing is, however, that they become aware of such demands.

2. The two remaining distinctions are more closely linked to the activity of learning as such. The first of these refers to a distinction between learning "for life" versus learning in school. Quite a large proportion of the subjects make this distinction, the essential nature of which seems to be that learning in school is perceived as an activity which, to a too large extent, has become stereotyped and routine, guided only by the needs and principles of schools themselves. Learning in school is thus held to be a particular activity whose prime feature is artificiality in the sense that it is not perceived as being organically related to anything outside the school situation itself. Many of the subjects who analyse learning in school on the basis of this distinction are consequently very negative and critical. However, for our present purposes it may suffice to say that the discovery of this problematic nature of learning in educational contexts seem to many to serve as a step through which learning becomes thematized.

3. Perhaps the most interesting distinction in the present data concerns the fact that at certain points subjects report themselves as having started to think about the nature of what is learned or, following the terminology of Colaizzi (1973), the nature of the learned content. This distinction is introduced by the subjects themselves as that between either learning and real learning or, even more commonly, as that between learning and understanding.

Real learning or understanding is, in this case, contrasted with rote learning and its main feature is considered to be that it in some way involves the abstraction of meaning (cf. Colaizzi, 1973) from learning materials rather than a mere reproduction of them. In a sense, the nature of what is learned is perceived of to be more complex and to have a more holistic nature; it is a perspective, a point of view, an interpretation, a principle, etc., rather than the plain "facts" which subjects previously report themselves as having perceived of as what is to be learned. These facts are now seen instead as subordinated to what should really be learned, i.e. the general meaning.
Saljo (1979c) has also studied people's conceptions of learning directly by simply asking them: "What do you actually mean by learning?" Students' answers revealed five rather different conceptions (these are extracts from pp. 12–19).

**Conception 1: Learning as the increase of knowledge.** The main feature of this first category is its vagueness in the sense that what is given in the answers is merely a set of synonyms for the word learning.

**Conception 2: Learning as memorizing . . .** The meaning of learning is to transfer units of information or pieces of knowledge, or what is commonly referred to simply as facts, from an external source, such as a teacher or a book, into the head.

**Conception 3: Learning as the acquisition of facts, procedures, etc., which can be retained and/or utilised in practice.** Compared to the previous conceptions . . . some facts, principles, etc. are considered to be practically useful and/or possible to remember for a long period of time, and as a consequence of this they should be learned.

**Conception 4: Learning as the abstraction of meaning.** Compared to the previous two categories the distinctive characteristic of this conception is that the nature of what is learned is changed. Learning is no longer conceived of as an activity of reproducing, but instead as a process of abstracting meaning from what you read and hear . . . the reproductive nature of learning is replaced by a conception which emphasises that learning is a constructive activity. The learning material is not seen as containing ready-made knowledge to be memorised, but rather it provides the raw material or starting-point for learning.

**Conception 5: Learning as an interpretive process aimed at the understanding of reality.** This conception of learning is very similar to the previous one in the sense that the picture which is supplied in the descriptions concerning the nature of what is learning is very much the same. The reason for making a further distinction is that some subjects emphasise that an essential element of learning is that what you learn should help you interpret the reality in which you live.

Saljo highlights fundamental differences underlying these conceptions.

A prominent feature of especially the second conception described above is the idea that knowledge is external to individuals and that the process of learning essentially means a more or less verbatim item-by-item transfer of knowledge from an external source, into the heads of the learners where it is filed. In contrast the essence of conceptions 4 and 5 seems to lie very much in an emphasis on the assumption that knowledge is construed by individuals as a result of an active effort on the part of the learner to abstract meaning from a discourse and also to relate this meaning to an outside reality.

It also seems clear that the qualitative differences between conceptions 2 and 3 on the one hand, and 4 and 5 on the other, are very similar to the
distinction between surface and deep level approaches to learning identified in experimental studies. It seems likely that the approach people adopt to learning tasks has to do with their conception of what knowledge and learning is (a similar point to that emphasised by Perry, 1970).

Those students Saljo identified (see above, Saljo 1979d) who held learning "to have one fairly obvious meaning which does not differ from one situation to another" are likely: (i) not to have yet made the distinctions outlined above, and (ii) to hold a conception of learning nearer to conception 1 than to conception 5. Referring back to the economics study described above, many of the students whose understanding of economics concepts did not change over the course are likely to have adopted a surface approach to studying. That some of these students may have done this may be understood in terms of the conceptions of learning held by these students rather than in terms of either psychological characteristics of these students (such as "intelligence") or characteristics of the course (such as "difficulty").

Influencing the Outcomes of Learning

Some of the students in the economics study described above will however probably have adopted a surface approach, even though they had a more sophisticated conception of learning. Such students may have been oriented to take a surface approach by characteristics of the learning task (such as its perceived sheer size or the perceived demands of the assessment system). The Goteborg group have undertaken a number of studies which have examined attempts to orientate students to take a particular approach to their learning in order to manipulate the quality of the learning outcome.

Before looking in detail at those studies two important points will be raised.

Firstly, the Goteborg group has distinguished between two sorts of variation in students' approach to learning tasks. Firstly, there is a horizontal dimension which refers to which things are attended to. Some sorts of mathemagenic devices may orientate learners towards particular content. Secondly, there is a vertical dimension which refers to the level of approach – not what is attended to but what quality of attention is involved. Here they are referring, of course, to their distinction between surface and deep level approaches.

Secondly, what students do in experimental studies may not be good indications of what they do in their everyday studies. When Saljo (1979d) asked students to talk about the way they went about an experimental task in terms of deep and surface approaches, he found that students spontaneously told him that they had tackled the experimental task in an atypical way:
Even subjects who report themselves as having once and for all decided never to use a memorizing strategy when learning claim that it is very easy to fall back into this behaviour in an experimental situation.

One reason for this was a:

... strong inclination on the part of most subjects to perform well i.e., to be "good" subjects and the uncertainty as to what the experiment was all about and, consequently, what kinds of questions they would be required to go through after the learning phase (Saljo, 1979d: 21-22).

Saljo concluded (1979d; 21) that:

This would seem to imply that the demand characteristics of this experimental study of learning (and no doubt, many others too) tended to lead to an approach to learning on the part of many of the participants which was perceived by them as being atypical of their normal way of setting about learning. In other words, subjects claim that in an experimental situation they perceive themselves as proceeding in accordance with a surface approach even though they do not normally consider themselves as doing this, not even in the school context. This is, of course, a prime example of the difficulty of experimenting with human subjects who are never neutral to an experimental situation, but instead respond in various ways to the demands they perceive.

This is a profoundly important point if one is to interpret the mass of research on mathemagenic devices which is almost exclusively done in artificial experimental contexts. It would suggest that variation in learning approaches and outcomes would tend to be only in a horizontal dimension, i.e., what or how much is attended to, what or how much is memorized. This is, in fact, exactly what Dahlgren (1975) concluded from reviewing literature on mathemagenic devices:

The impression gained as a whole is that the controlling factors derived from the mathemagenic hypothesis probably do not have the ability to create a qualitatively new pattern of learning activities. Rather, the effects on the learning result are to be found in the horizontal variation of the level of attention created by the questions. In other words, these lead to an alternative distribution of learning activities in accordance with the distribution dictated by the demands of the situation as it is expressed in the questions.

This suggests that normal forms of content-orientated guidance in the form of in-text questions cannot affect the vertical level of the approach students take.

Dahlgren's study (1975) examined the quality of learning outcome of experimental and control subjects who read the first two chapters of Samuelson's text book "Economics". The experimental subjects had inserted
in-text questions referring to specific parts of the text. All subjects were asked the same questions about the passage, in depth interviews. The outcome of a part of this study will be illustrated here with students' answers to the first question asked in the study, concerning Samuelson's definition of economics. Students' answers were analysed, and five categories emerged:

A: "Economics is the study of the allocation of (a) productive resources and the distribution of (b) commodities."
B: "... only contain the resource allocation aspect of the study of Economics."
C: "... only deal with the distribution of production output."
D: "... do not at all mention the study of distribution/allocation of resources or commodities..."
O: "... declared that they did not remember anything at all...

The experimental and control groups' answers fell into these categories in the way shown in Table V.

As can be seen the experimental manipulation resulted in qualitatively poorer answers. This pattern was evident, to a small extent, in the overall analysis of all the questions asked in Chapter 1 (p. 114). This therefore tentatively confirms Dahlgren's conclusions from research on mathemagenic activities.

However, it may be that the nature of the in-text questions used in Dahlgren's experimental manipulation may not have involved an explicit orientation to deep level processing. What happens when such an explicit orientation is used as an experimental manipulation? In other words can content-orientated guidance change students' conception of the learning outcome?

<table>
<thead>
<tr>
<th>Qualitative category of answer</th>
<th>Experimental group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>B</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>D</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>O</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Total number of students</td>
<td>19</td>
<td>19</td>
</tr>
</tbody>
</table>

Source: Dahlgren, 1975; Table 19, p. 114.
task and result in a deep level approach and a fuller understanding of the text?

Marton (1975b) carried out a study in which the experimental manipulation consisted of the insertion into a text of content neutral questions after each section (e.g. "Can you summarise the content of each sub-section in one or two sentences?"). The control subjects were allowed to read as they wished. Two distinctions were used in analysing students' answers to questions after their reading: (i) between adequate and inadequate descriptions of the topic; (ii) between merely mentioning topics and describing the content of the topic.

The control group gave twice as many adequate descriptions as the experimental group and merely mentioning was four times as frequent in the experimental group. These dramatic differences were even evident two months later. Marton concluded:

Instead of adopting a deep level processing, the aim of the experimental treatment, the subjects seem to have become fixated with the explicit requirements of the questions . . . the subjects defined the task in a far narrower way than was intended by the experimenter.

The questions via which the requirements are defined are only signs of or means to, the real intended requirements, i.e. the acquisition of knowledge in the sense of competence. There are no limited sets of questions however, which define competence. When subjects interpret the signs of intended requirements in such a way that they are identical to the intended requirements, they technify and narrow the task and make it trivial (Marton, 1975b).

This phenomenon of "technified" approach is evident again in a later study (Marton and Saljo, 1976b). While it seems to be an easy matter to induce surface level processing, attempts to induce deep level processing may interfere with or "technify" student learning.

On the basis of these Goteborg results, and his own studies of the effects of study skill activities on reading, Edfeldt (1976) concluded that:

... what is central in the reading process is the reader's uninterrupted contact with the subject matter in the text. A direct result of this is that every form of interruption of the contact between the reader and the text's subject-matter leads to a deterioration of the reader's performance. Such interruptions can be ... of such apparently high content-promoting value as, for example, those which occur in connection with the most refined mathemagenic activities. They can ... have the form of direct questions or structuring sentences which have been slipped into the running texts. A common feature of all these different phenomena is that they do not in any way promote any form of contact between the text's subject-matter and the reader on the reader's terms. This means, of course, that the only aid that is adequate for a better understanding of the text comes from the reader's own frame of reference. Everything that is brought in from outside, e.g. pure technical advice
or structuring measures affecting the content with an assumed basis in the author's frame of reference or an actual basis in someone else's frame of reference, puts a stop to the spontaneous and necessary interplay between the reader and the text's subject-matter.

The Goteborg Research Perspective

The above selective review ought to have made it clear that the research of the Goteborg group is consistent with a particular philosophical and theoretical perspective. The aim of this section is to outline this perspective on the basis of, primarily, three important "position" papers (Marton, 1978 and 1981; Marton and Svensson, 1979).

The perspective of the Goteborg group is a reaction to the naturalism of traditional research on learning. Their aim is to describe "the world as perceived" — a phenomenological aim. Marton contrasts this with the aim of traditional research — to describe "the world as it is". He describes the 1st order perspective as noumenal, while the 2nd order perspective, adopted by Marton, is phenomenal.

Marton argues that these two perspectives are autonomous and complementary. What can be seen from one perspective cannot be seen from the other. He therefore believes that there is a clear relationship between what we are looking for in research and the position, or perspective, from which we do the looking.

The second order perspective has been adopted by numerous studies on student learning in recent years and Marton distinguishes three areas with which this perspective is concerned: the content, context and awareness of learning. In the 2nd order perspective:

Firstly, learning always occurs naturally in a context . . . the context of learning is (thus) not described independently of the learners but rather through their eyes. The description thus refers to the way in which students relate themselves to the situation. . . . it always has a content as well. . . . we consider the finding and describing of conceptions (meanings) of fundamental aspects of various learning materials to be one of the main tasks of research into student learning.

Lastly, not only is there a consciousness of the content in the learner, but there is a consciousness of his being conscious of it as well. . . . the learner's experience of the act of learning (Marton and Svensson, 1979).

This perspective therefore entails a concentration on one or more of these aspects of the learners experience and that experience is studied from the point of view of the learner.

This distinction of perspective is the most crucial characteristic of the Goteborg work and, in the view of the authors, it subsumes the other distinctions they have made (Marton and Svensson, 1979: abridged from Table I).
Qualitative vs. Quantitative Description
Contextualised vs. Generalised Conceptualisation
Internal vs. External Relations
Understanding vs. Explanation Forms of Comprehension
Emancipatory vs. Technical Use

What is significant about these distinctions? The inevitable consequence of taking a 2nd order perspective is a change from mainly quantitative descriptions. This is because:

the learner experiences content, as well as process more as a "what" or "how" than "how much".

The "how much" question relates exclusively to those situations where that which is to be studied is already defined. In order to measure something you must know what "it" is. But within the 2nd order perspective what "it" is, is the focus of attention. Within the 1st order perspective this is taken for granted. For the Goteborg group results are in terms of descriptions of different conceptions of aspects of reality and these inevitably entail differences in terms of kind. In the 1st order perspective we:

... observe the learner and describe him as we see him and we observe the learner's world and describe it as we see it. We frequently relate our description of the student to our description of his world and generally do this within an explanatory framework.

Aptitude—Treatment—Interaction (ATI) studies are a good example of a 1st order perspective (cf. Biggs, 1976), and so are attempts to predict academic performance on the basis of multi-variate analysis of student characteristics (cf. Entwistle and Wilson, 1977). The linking characteristics of such studies is the way descriptions of the differences between students and differences between learning outcomes are external to the students and contexts being studied. When multivariate analysis reveals relations between externally described variables, variation in outcome is described as being explained. However such external relations take us little further in understanding what is going on from the student's perspective.

A problem we face in understanding how students learn is that any number of hypotheses can be proposed which "fit" such external relations. Interestingly, such hypotheses characteristically appeal to descriptions of students' experience of learning in order to make some sense of them. But these are purely hypothetical descriptions of student experience. One needs to adopt a 2nd order perspective in order to see this experience and to describe it rather than simply to imagine what it might be.
The relations which are derived from a 2nd order perspective are of a different form to the external relations described by ATI studies. When one is looking from the learner's point of view all relations are internal: the learner's, "experience of the world is a relation between him and his world". The emphasis on the context of learning and on the internal relations of the learner's experience of context makes the description the research provides contextual in nature, as opposed to generalised. The aim of the perspective is:

To find and systematise forms of thought in terms of which people interpret aspects of reality.

For example, the descriptions "deep" and "surface processing" are considered to be one such "form of thought" in terms of which learners interpret how they approach learning tasks. These descriptions are contextualised and refer to specific statements students made about their experiences of specific contexts. The forms of thought may be fairly generally observable from the 2nd order perspective (in fact they have been observed in sufficiently varying contexts to suggest that this is so) but this generality is open to research, it is not taken for granted. And such descriptions can only be derived in the first place from the analysis of people's experience of specific contexts.

Recently, Marton (1981) has introduced the label "phenomenography" to describe their work within the 2nd order perspective. Phenomenology is basically concerned with methodology, whereas phenomenography is substance orientated and is concerned with describing people's experiences of reality.

For researchers in education, perhaps the most important distinction, other than that of perspective, is that between different uses to which research is put. There has been a long, if often implicit debate within our own institution, the Open University, concerning the way in which research should "inform" course design. In one camp are those who aim to provide algorithms and procedures for faculty "operatives" to use. The relation between theory and practice is seen to be of a "technical" nature and theory is assumed to be of a sufficiently developed form that the algorithms lead to the proper actions. Some of our Student Assessment Research Group's manuals on writing computer marked assignments seem to be firmly in this camp. Stratton (1979) for example, offers "Algorithms for Item Polishing". In contrast, Marton and Svensson (1979) describe research as follows:

The rival view implies that the choice of action in every concrete situation must be based on profound knowledge of and familiarity with the specific circumstances. The choice of action has to be made by those who run the risks and who know the conditions: by the participants themselves. Strategic choices can thus never be
derived from any general formulations. The relation between theory and practice should therefore be of an emancipatory character. The theory should raise the level of awareness in the participants and in this way indirectly increase the likelihood of better, more considered, and open decisions.

This distinction can be clearly seen in attempts to help students to learn more effectively. As has been argued elsewhere (e.g. Gibbs, 1977; Edfeldt, 1976) technical or "study skill" approaches to improving student learning (epitomised by advice based on experimental psychology) are usually ineffective and sometimes harmful. The alternative, emancipatory approach is illustrated by student-centred approaches to learning to learn (e.g. Gibbs, 1981).

Marton sees his research as providing teachers with descriptions of how students conceptualise the subject matter and experience learning and not as providing general rules for how to teach. In fact he sees teacher competence as determined by the extent to which teachers understand the way their students think about the subject matter [2]. The relative ineffectiveness of mathemagenic devices in his research also supports this position.

Finally, being researchers, we should like to make a further point about the implications of this research perspective for the forms of evaluation which are usually undertaken to test the effectiveness of certain teaching devices. We should like you to imagine that the efficiency of the in-text questions (ITQs) in a particular text is being examined. Two sorts of answers are normally given in this sort of situation: (1) The value of ITQs is "explained" by theories which are without exception, 1st order theories. The experimental evidence is, almost without exception, quantitative. Dahlgren (1975) reviews this literature and goes to some lengths to demonstrate its limited value. (2) The value of ITQs is demonstrated empirically. Typically such evidence might be of the form:

Mean percentage of ITQs read in text = 58%; Mean helpfulness rating = 3.21 (1 = not at all helpful, 5 = very helpful). Correlation between individual students' mean helpfulness ratings and assessment grades for this text Unit = −0.007 (not significant, n = 2,850). There was no difference between male and female students. Neurotic, field-independent introverts found the ITQs not very helpful significantly more often than stable, field dependent extroverts (Z test, p < 0.05).

Obviously this is something of a parody, but we have all seen vast quantities of such data. One of its most important characteristics is that it does not lead to an increased understanding of how to write your next ITQ.

In contrast, the value of ITQs would be examined in quite a different way from a 2nd order perspective.

Both the approach students take to reading texts and the outcome of their learning as described in qualitative terms has been shown to vary as a function of the nature of various forms of content-orientated guidance.
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it necessary to publish a collection of techniques for what they call classroom assessment (Angelo and Cross 1993). They use the term assessment to include what we would term evaluation and also ways of ascertaining what students have learnt and understood. The AAHE have run conferences based on this theme as part of an initiative to encourage faculty to research their own practice. This initiative was triggered in part by a Carnegie Foundation Report (Boyer 1990) which was concerned with the notion of the ‘scholarship of teaching’ – an attempt to bring to the improvement of teaching some of the individualistic creativity and rigour which academics bring to the scholarship involved in their research.

There are also a number of accessible publications from the UK and Australia designed to give lecturers good ideas about how to collect useful information to follow up hunches about what might be going on in courses (cf. Gibbs et al. 1989; McKeman 1991). The importance of going beyond routine evaluation to the committed exploration of practice has been emphasized repeatedly by Ramsden (cf. Ramsden 1992) who has done more than most to explain and demonstrate the relevance of student learning research to the improvement of student learning. In the CNAA Improving Student Learning project those involved did not simply evaluate their teaching. They had all undertaken evaluations in the past. Instead they researched it, using research tools and research concepts.

**Action research and initial training**

At the University of Brighton the programme for new lecturers has involved the use of action learning sets (cf. McGill and Beaty 1992) in which, at regular meetings between lecturers (learning sets), participants took turns to gain the support of the set in tackling teaching problems. They undertook action learning between meetings, learning through personal experimentation and reporting on progress at subsequent meetings. However, these were not theory-free discussions and neither was the theory grounded. The programme also contained workshops which familiarized lecturers with student learning research; it is this research base which informed their action learning. At Oxford Brookes University the programme for new lecturers involves negotiated learning contracts in which lecturers engage in small scale innovation and reflection on their practice. However, there is little theoretical or research basis for this innovation and the only preceding workshops are concerned with teaching and assessment techniques rather than with the kind of theory or research tools which could enable reflection to go beyond past experience. Much initial training is evolving from skill development models towards reflective practitioner models (cf. Schön 1983), but there needs to be careful attention paid to the tools, both practical and conceptual, with which lecturers are equipped if their reflection is to lead to worthwhile development.

**Conclusion**

Traditional research into student learning has had little impact on practice in higher education. Part of this research helps to explain why, by showing how lecturers have different conceptions of teaching and learning and defend their conceptions from alternatives. Action research has offered a way of engaging lecturers directly in researching their own practice and this has held the promise of lecturers developing their own conceptions. However, such changes, it is argued, are unlikely to come about through lecturers’ development of grounded theory, which may simply reinforce preconceptions. Instead, action research should take advantage of developments in research and research tools and build directly on more sophisticated conceptions of teaching and learning and challenge preconceptions. Whether institutional funding for educational development projects and initial training bring about conceptual change as well as practical innovation may depend on the extent to which those involved are assisted in reflecting on their practice from a theoretical standpoint.
Action research as a staff development process

In this section I will give brief accounts of a variety of staff development initiatives as a way of distinguishing between different kinds of action research which are driven by theory or institutional processes to a greater or lesser extent.

Pure action research and grounded theory

In Australia, Zuber-Skerritt (cf. Zuber-Skerritt 1992) has led an action research movement underpinned by the notion of grounded theory (Glaser and Strauss 1967). It emphasizes the importance of the understanding lecturers develop from their action research emerging out of the specific teaching and learning contexts they are working in, rather than being derived from existing research and theory. This contrasts with the use of existing theory and research tools applied by lecturers to their own situation, as used in the CNAA Improving Student Learning project described above. At the University of Queensland in Australia, the Departmental Excellence in University Education Project (Zuber-Skerritt 1993) used Australian Federal Government funding to support nine major action research projects. I was involved in presentations, workshops and consultancy with those who were about to bid for these funds. Those involved had already been to a workshop on action research and some of their reactions were not positive. It was seen by some as 'organized common sense', 'process without any content' or 'a time-consuming way to re-invent the wheel'. I found those involved eager to be given practical research tools and a strong research framework within which to work (such as that provided by student learning research), rather than having to start from scratch. The rationale for grounded theory is that participant observers should not be constrained in what they see by preconceptions from theory derived from different contexts. However, as we have seen, lecturers already have implicit theories of learning and teaching and these will greatly influence their perceptions. There is a real danger of action research operating only within existing implicit models and not being challenged, of lecturers collecting only the kinds of data which fit their implicit models (for example, only quantitative measures of learning outcome) and of any grounded theory being developed simply being an externalizing of implicit models. As we have seen, what students say about teaching is also rooted in their conceptions of learning and it takes more than a commitment to action research to interpret students' responses. It takes a familiarity with the kind of research literature referred to earlier in this chapter. Lecturers need to collect the kinds of data which could challenge their unsophisticated conceptions and models of learning which can help in interpreting this data.

Innovation and evaluation

In the UK there have for some years been institutions which have funded educational development projects (Jaques 1987) and such schemes are becoming commonplace. At Oxford Polytechnic a Staff Release Scheme was modelled on Brighton Polytechnic's similar scheme and has supported 20 or so projects a year since the early 1980s. Most of these projects involved introducing new teaching and learning methods into courses, and it has always been a requirement to plan and undertake evaluation of the innovation's effectiveness. However, most of this evaluation has been pragmatic and theory-free and has led to little reconceptualization of the immediate practical problems, let alone a reconceptualization of the nature of teaching and learning. Such schemes are usually described as staff development programmes, but it is not the case that development of courses or teaching materials inevitably leads to staff development.

In contrast, the TRAC (Teaching, Reflection and Collaboration) project at Queensland University of Technology (QUT), supported by the same Federal funds which supported their rival's DEUE project described above, involved extensive reflection and write-ups of projects, peer collaboration and clinical supervision in an action research approach to innovation (cf. Carr and Kemmis 1986). The reports from the projects involved in this initiative (Weeks and Scott 1992) involved references to published literature on teaching methods and research methods. This differed from the Oxford Brookes model in being more reflective and from the University of Queensland model in being less pure about grounded theory. At QUT the lecturers were making use of available theory and being encouraged to reflect upon it, supported by educational development staff. Here course development and staff development went hand-in-hand, driven by reflection and supported by research.

Beyond evaluation

In my experience it is not enough to sell to lecturers the advantages of action research or to simply explain the action research cycle. They want to know exactly how to find out what is going on in their courses. They may well have undertaken evaluations of teaching or courses in the past but usually this has been for the purpose of checking that a course or a teacher is not rated much worse than other courses or teachers or checking that enough students are reasonably satisfied. Even where evaluation has been fairly high profile there has seldom been a genuine desire to understand what is going on. As a result, few lecturers know how to do action research: they simply don't have the research tools.

In the USA, where enormous quantities of student feedback are collected, the American Association of Higher Education (AAHE) have found
for getting lecturers in ten institutions to develop their understanding of the way their courses were operating at the same time as developing their practice and their courses. The project was designed to apply student learning research to the improvement of courses and student learning. Action research brings practice and theory, action and research together. It involves lecturers researching their own practice in a cyclical sequence in four stages (as shown in Figure 2.1). Originally developed by Lewin in the USA in the 1940s and applied by Stenhouse to curriculum development in schools in the UK in the 1970s, action research has become widely adopted as a model for change in courses and teaching. A number of useful guides to action research practice in higher education are now available (cf. Kemmis and McTaggart 1988; McKernan 1991; Kember and Gow 1992; Zuber-Skeerritt 1992; Kember and Kelly 1993) and I will not attempt to provide an instant guide here. From the point of view of the Improving Student Learning project, action research had the following advantages.

- Those studying the innovations would be very close to what was happening; the project was not concerned with neutral objectivity.
- What was learnt would be able to be applied immediately, even though that would change the nature of the innovation. The project was not concerned with tightly controlled experimental comparisons of fixed alternatives.
- Those involved would learn and develop as teachers; the project was concerned with staff development as well as with innovation.
- Through the cyclical process of action research, more progress would be made in developing teaching and assessment methods and in developing ways of monitoring the quality of student learning.

Action research differed in important respects from what could have been mere case studies of innovations, as summarized in Table 2.3. The Improving Student Learning project used the notions of deep and surface approaches to learning as the theoretical context for action research and the Approaches to Studying Inventory and in-depth interviews as the main research tools. It supported a team of lecturers in researching their own innovations. The project demonstrated that it was possible to shift students from a surface to a deep approach and to improve the quality of learning outcomes in a variety of contexts and through a variety of innovations, and to identify under what circumstances and through what mechanisms these beneficial changes were possible. The outcomes of the project have been disseminated through two conferences in the UK, 30,000 leaflets and a book (Gibbs 1992), and have been publicized widely in the USA and in Australasia through conferences and workshops in a number of institutions. One heartening outcome of this dissemination was evident at the 1993 Improving Student Learning Symposium at Warwick (Gibbs 1994). Although the keynote papers were presented by researchers, most of the papers were by lecturers who were researching their own practice and most of the participants were lecturers, not researchers. This was a marked contrast to the kinds of event described in the second paragraph in this chapter which took place in the 1970s. The research basis, concepts and research tools were very much the same, but the use to which they were being put was very different.
which underlie them, all the time, and cannot make much headway without tackling them. The problem is how.

The 53 Interesting Ways To Teach series of books (cf. Gibbs et al. 1984) were written in an attempt to avoid this problem. Because lecturers were so uninterested in theory or reluctant to reconsider their goals, indeed resistant to any frontal assault which involved thinking rather than action, we attempted to change lecturers' conceptions by subterfuge. The teaching methods we described nearly always shared an underlying implicit model of teaching and learning. However, we seldom mentioned this underlying model. Methods were presented in a brief and attractive way which made them look possible to try and were clearly targeted at teaching and learning problems lecturers could recognize and frequently experienced. We hoped that by trying out simple methods, without being asked to think about theory or abandon cherished belief, lecturers would learn experientially. The methods would inevitably work because they were so brilliant. Lecturers would see how student learning changed qualitatively and their eyes would be opened. To an extent this strategy actually worked and we have had many conversations with and letters from lecturers who picked up methods simply by reading and who subsequently realized all sorts of interesting things about teaching and learning as a consequence of trying methods on a purely pragmatic basis.

However, the way these lecturers articulated their understanding left a lot to be desired and would seldom have provided a sound basis for decision-making beyond the immediate vicinity of the particular methods with which they had experimented. Even those who took the trouble to write or phone us had not often reflected to any great extent on why methods worked; as well as signs of evidence of dawning understanding, we saw signs of mechanical and thoughtless repetition of techniques. I once had an early morning call from an anxious lecturer from Trondheim about to start a class, asking if, as his class was 55 minutes and not an hour long, would the carefully timed sequence of activities on page 54 still work?

Methods and models

I have argued in the past (Gibbs 1981) that study skills on their own are of limited value and that students are perfectly capable of taking any particular study technique and corrupting it to achieve their own, often inappropriate, ends. Ramsden et al. (1986) showed how a perfectly well-conceived study skills course succeeded only in orienting students to take a surface approach and failed either to change students' skills or orient them towards attempting to make sense of the material they were studying. Without some understanding of the type of learning they are supposed to be engaging in, study skills on their own are unlikely to help students to learn appropriately or effectively. The most important aspect of students' studying is their sense of purpose rather than their technique (Gibbs 1983). They need to have a clear sense of what they are trying to do and what they want out of their studying efforts. I believe the same arguments apply to lecturers and teaching techniques as to students and study techniques.

It is not enough to select new teaching methods or course designs on purely pragmatic grounds without an understanding of the way students are likely to respond to these methods or any engagement of lecturers with the conceptions, values and purposes underlying methods. Blackmore and Harries-Jenkins (1994) reported how a lecture-based accounting course with large student numbers was replaced by a course involving less teaching and more, supposedly independent, learning from learning packages. This is the kind of change in methods which staff developers (and management) often encourage. However, the course succeeded only in moving the students from a deep to a surface approach and reducing their motivation. Students gave up trying to make sense of the material and only attempted to reproduce it, and some students gave up altogether. It is not enough simply to innovate. Without a more sophisticated conception of teaching and learning, lecturers will often be in no position to make appropriate decisions about what directions to innovate in or how to implement innovations effectively. I have often heard lecturers say 'Oh, we've tried group projects [or any other method they can think of] and they don't work.' Without a more sophisticated conception of good teaching or good learning, lecturers will often be in no position to understand why things have gone wrong or even to notice that things have gone wrong. In Blackmore and Harries-Jenkins' study (1994), the best clues about why the quality of student learning had declined so much came from the use of the Approaches to Studying Inventory.

Just as I have argued that students need to experiment with study techniques and try to understand why some methods work in some situations but not in others, so lecturers must experiment and try to understand what is going on and why some teaching methods and course designs work in some contexts but not in others. Just as I used to tell students that I didn't care what study methods they used as long as they were in a better position to make principled decisions about how to tackle any particular learning task in the future, so it is more important that lecturers understand better what is going on in their courses than that they have mastered a new technique. The main feature of the programme for new lecturers at Oxford Brookes University is not the list of teaching topics which are covered – the programme is not competence based – but that lecturers leave the programme in a better position to make appropriate decisions about how to teach.

Action research

The Council for National Academic Awards (CNAA) funded project, Improving Student Learning (Gibbs 1992) employed action research as a vehicle...
Teachers' conceptions of teaching

There have been a number of accounts of fundamental differences in what lecturers believe themselves to be trying to do in teaching in higher education. Some relate to discipline differences while others have been based on teasing out underlying conceptions of teaching. Northedge (1976) explored what he called 'our implicit analogies for learning process'. He contrasted building and gardening analogies, illustrating the way these powerful analogies imbued the decision-making logic of lecturers even where they had no conscious knowledge of a theory of learning (and would probably deny the value of such theories). He showed how apparently rational decisions about how to design courses could be traced back to these implicit analogies.

Fox (1983) described four conceptions of teaching and learning based on interviews with new lecturers. He proposed a 2 x 2 model in which he distinguished between who initiates the learning (the teacher or the student) and the focus of learning (content or change in students' understanding and skills). So, for example, some lecturers believe they have the responsibility to initiate learning and they see their goal as knowledge acquisition while others believe that students have responsibility to initiate learning and the goal is changes in students' understanding and skills.

Trigwell et al. (1993) used phenomenological methods to explore lecturers' approaches to first-year teaching on science courses. They describe five categories of approach to teaching evident in lecturers' explanations of what they do and why.

1. A teacher-focused strategy with the intention of transmitting information
   The focus is on facts and skills but not the relationship between them. Prior knowledge is not seen as important and it is assumed that students do not need to be active in their learning.
2. A teacher-focused strategy with the intention that students acquire the concepts of the discipline
   It is assumed that concepts can be transmitted by telling them to students and that students do not need to be active.
3. A teacher/student interaction strategy with the intention that students acquire the concepts of the discipline
   Students are not seen to construct knowledge but to gain it through active interaction in the teaching-learning process.
4. A student-focused strategy aimed at students developing their conceptions
   It is assumed that students need help to develop their world view or the conceptions they already hold through the active construction of knowledge.
5. A student-focused strategy aimed at students changing their conceptions
   It is assumed that conceptions cannot be transmitted but that students have to reconstruct a new world view or conceptions.

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<tr>
<th>STRATEGY</th>
<th>INTENTION</th>
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<tbody>
<tr>
<td>Information transmission</td>
<td>A</td>
</tr>
<tr>
<td>Concept acquisition</td>
<td>B</td>
</tr>
<tr>
<td>Conceptual development</td>
<td>C</td>
</tr>
<tr>
<td>Conceptual change</td>
<td>D</td>
</tr>
<tr>
<td>Teacher-focused</td>
<td>E</td>
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This category system embodies two key variables: intention and strategy. The four intentions involved are information transmission, concept acquisition, conceptual development and conceptual change. The three strategies are teacher-focused, teacher-student interaction and student-focused.

The relationship between these two variables is summarized in Table 2.2.

It is a common experience of staff developers to, from time to time, encounter almost total intransigence from some individuals in the middle of workshops. After a period of apparent open-mindedness and interest, participants suddenly dig their heels in and stop you dead in your tracks. No matter how many practical objections you manage to respond to with practical solutions, no matter how many examples you are able to provide of the use of the methods under discussion or even hard evidence of their success, a complete impasse has been reached. Participants start every sentence with 'yes but...' and engage in all kinds of extraordinary defensive mechanisms. A clue to what is going on can sometimes be found when they appeal to some vague sense of 'what university education is all about' or your 'not understanding the nature of the discipline'. I have gradually learnt to recognize that what has usually happened is that I have tripped over a fundamental underlying conception of teaching and learning which is challenged by the conception implicit in the methods being discussed. These fundamentals may involve the notion of a fixed corpus of knowledge which must be covered, the belief that students require some kind of mastery of a body of knowledge before anything else can be tackled, or the conviction that students are incapable of making any appropriate decisions about what or how to study because they are not yet subject experts. Brew and Wright (1990) encountered a range of conceptions underlying different Open University tutors' resistance to using methods in a staff development resource pack. For example, one technology tutor explained why he didn't adopt any of the suggestions for group discussion in tutorials: 'with the limited amount of time with the students, being an engineer, I tend to think that I have to get the facts across... and I think that is the important thing, to try and summarize the important points.' Staff development runs up against these notions, and the conceptions of teaching and learning...
activities such as reading a chapter (Van Rossum and Schenk 1984). For some students, then, their limited understanding of what learning consists of prevents them from approaching learning tasks in a deep way and therefore from learning effectively. Could the same be true for lecturers—that their unsophisticated conception of teaching and learning prevents them from teaching more effectively? While Säljö’s categories were derived from interviews with students, they provide insights into why some lecturers justify the teaching methods they use. I once heard a Harvard professor say that ‘students need to be able to drink from a fire hose if they are to succeed on my course.’ I don’t think he realized that his boast about the rate and volume of his lecturing simply revealed an unsophisticated conception of learning in which students’ ability was seen in terms of their capacity to absorb information.

As well as exploring students’ conceptions of learning, research has also explored students’ conceptions of good teaching. Not surprisingly students have widely varying ideas of what constitutes good teaching. This is very important because theory-free standard student feedback questionnaires are being responded to by students who believe completely different things about what teachers ought to be doing. It is common for some students, and particularly some overseas students, to prefer straight lecture programmes and predictable exam questions and react strongly against student-centred methods and open-ended tasks where students share responsibility. There is evidence from questionnaire studies that students who take a surface approach have a different view of what good teaching consists of from that of students who take a deep approach (Entwistle and Tait 1990). In one case study in Gibbs (1992) an innovation designed to move students from a surface to a deep approach had to be abandoned due to the strength of student opposition to any change in the superficial demands their courses made. We tend to respond to student feedback as if all students believe the same things about what constitutes good teaching and that these beliefs are the same as ours. This is clearly not the case and interpreting student feedback is fraught with difficulties. Chapter 6 will explore this problem further in the context of using student feedback in staff development.

Van Rossum and Taylor (1987) found that some students think that the teacher should do all the work and make all the decisions. The teacher should select the subject matter, present it in teacher-controlled classes, devise tests and mark students on how well they have learnt the material which has been presented. What is to be learnt and what learning outcomes should look like should be completely defined by the teacher (a closed conception of teaching). They found that other students think that while the teacher has responsibility for setting the learning climate, for making learning resources available, and for supporting students, all the responsibility lies with the student: responsibility for selecting learning goals, devising appropriate learning activities and for judging when learning outcomes are satisfactory (an open conception of teaching). The closed conception of teaching is held almost exclusively by students with Säljö’s conceptions of learning at levels 1, 2 or 3, while the latter, open, conception of teaching is held by students with conceptions of learning at levels 4 or 5. This relationship is summarized in Table 2.1.

The key issue here is whether students see good teaching as closed teaching because they have a reproductive conception of learning, or whether they have a reproductive conception of learning because they have been experiencing closed teaching. I believe the latter explanation, for three reasons. First, it is easy to see even young children taking a deep approach to learning. They are able to tell you when they don’t understand and they can sometimes surprise you by announcing when they have really understood something which previously they had only learnt by rote (Rogers 1969). It seems as though an implicit understanding of different levels of learning is somehow lost through schooling. Second, high school pupils have been found to progressively abandon a deep approach over the four years of their studies, implying an effect on their studying of the type of teaching commonly used to prepare pupils for that level of exams (Tobin and Fraser 1988). Third, longitudinal studies of students in higher education have plotted rapid developments in the sophistication of students’ conceptions of learning, attributed directly to the nature of learning tasks and assessment the students have experienced (cf. Gibbs et al. 1984). It seems that students can become more sophisticated as learners as a consequence of their experience of more open-ended learning environments. This is a well documented and commonplace experience of students undertaking third year undergraduate project and dissertation work after two years of lecture-based and examined courses.

So here we have a picture in which the quality of student learning outcomes is affected by students’ approach, their approach is affected by their conception of learning, and their conception of learning is affected by the type of teaching they experience—not the teaching and learning methods themselves so much as the underlying model of teaching and learning these methods embody. So next we need to explore these underlying models and lecturers’ conceptions of teaching and learning.

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**Table 2.1** The relationship between students’ conception of learning and their conception of teaching

<table>
<thead>
<tr>
<th>CONCEPTION OF LEARNING (Säljö)</th>
<th>CONCEPTION OF TEACHING (Van Rossum and Taylor)</th>
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<tr>
<td>Reproducing (Levels 1, 2 and 3)</td>
<td>Closed Teacher selects content, presents it and tests whether it has ‘stuck’</td>
</tr>
<tr>
<td>Meaning (Levels 4 and 5)</td>
<td>Open Learner functions independently with the facilitation of the teacher</td>
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</table>
to find out more about what their students did with their study time and undertook a good deal of informal hypothesis testing about why courses didn’t work as well as they might. But nearly all this work had no theoretical underpinning. While it helped lecturers to make decisions about what to do and how much to do, it was not oriented primarily towards developing their understanding of how students learnt on their courses and provided little in the way of a robust rationale for future action. In particular, it seldom challenged lecturers’ conceptions of the teaching and learning process. My work may have improved the efficiency of courses and changed their understanding of how students learnt on their courses and provided seldom challenged lecturers’ conceptions of the teaching and learning process. My work may have improved the efficiency of courses and changed their outcomes quantitatively, but only from time-to-time did it reorient them and change their outcomes qualitatively.

I was aware that those to whom I was acting as a consultant frequently had a very different conception of what was going on in their courses than I did. They were working with different implicit models of learning. Sometimes these differences have been almost farcically wide. On one occasion while running a staff development workshop on large seminar classes in politics, I had been demonstrating a series of techniques which involved dividing the seminar group up in various ways so that students were, in effect, discussing in small tutor-less groups within a much larger class. Throughout the demonstrations the professor had been looking increasingly perplexed and disengaged and he eventually brought proceedings to a halt with the statement, ‘I can’t see what students could possibly gain from talking with each other.’ With gulf in understanding of this depth there was little to be gained by further demonstrations. What was needed was an exploration of his beliefs and perceptions of the use of discussion and his underlying assumptions about how learning takes place and hence the purpose of teaching.

A number of writers have explored these implicit conceptions of teaching and learning which so pervade lecturers’ thinking and decision-making. The following two sections will examine studies of students’ conceptions of learning and teachers’ conceptions of teaching.

**Students’ conceptions of learning**

Säljö (1979) found that when he was interviewing students about whether they were taking a deep approach (attempting to make sense of material) or a surface approach (trying to reproduce material) they used the word *learning* to mean different things. He interviewed many people about what they meant by learning and was able to distinguish five categories of answers, listed here, with examples of the kinds of things students who have these conceptions say.

1. **Learning as an increase in knowledge**
   The student will often see learning as something done to them by teachers rather than as something they do to, or for, themselves. Learning is simply a quantitative accretion of information. ‘To gain some knowledge is learning . . . We obviously want to learn more. I want to know as much as possible.’

2. **Learning as memorising**
   The student has an active role in memorising, but the information being memorised is not transformed in any way. ‘Learning is about getting it into your head. You’ve just got to keep writing it out and eventually it will go in.’

3. **Learning as acquiring facts or procedures which are to be used**
   What you learn is seen to include skills, algorithms, formulae which you apply, etc., which you will need in order to do things at a later date, but there is still no transformation of what is learnt by the learner. ‘Well, it’s about learning the thing so you can do it again when you are asked to, like in an exam.’

4. **Learning as making sense**
   The student makes active attempts to abstract meaning in the process of learning. This may involve only academic tasks. ‘Learning is about trying to understand things so you can see what is going on. You’ve got to be able to explain things, not just remember them.’

5. **Learning as understanding reality**
   Learning enables you to perceive the world differently. This has also been termed ‘personally meaningful learning’. ‘When you have really learnt something you kind of see things you couldn’t see before. Everything changes. You have become a different person.’

Subsequent longitudinal research has confirmed these categories and elaborated on category 5, distinguishing between ‘seeing things in a different way’ and ‘changing as a person’ (Beaty et al. 1992). There are other developmental schemes, describing how students change in the sophistication of their perception of the learning tasks they face, which embody very similar descriptions. Perry (1970: 9) outlines a nine-stage scheme of development in which the first stage is described in almost identical terms to those of Säljö (‘the quantitative accretion of discrete rightness to be acquired through hard work and obedience’).

In Säljö’s scheme, categories 4 and 5 are clearly qualitatively different from categories 1–3. Students who understand what learning is at Levels 1, 2 or 3 may have trouble comprehending what a deep approach consists of and are very unlikely to take a deep approach to learning tasks. Students who are at levels 4 or 5 can take either a deep or a surface approach, depending on the task and their perception of its demands. The connection between these underlying conceptions of learning and the approach students take to specific learning tasks is so strong that it is possible to predict the quality of learning outcomes directly from students’ conceptions of learning. All you need to know about students is that they have a conception of learning at Level 1, 2 or 3 and you can be fairly certain that they will only derive a superficial and fragmentary understanding from...
Changing Lecturers' Conceptions of Teaching and Learning Through Action Research

Graham Gibbs

Much educational development is conceived of in terms of changing lecturers' practice - their techniques and skills - and the methods employed commonly involve training and practice. This chapter explores staff development as a process of changing lecturers' conceptions of teaching and learning through action research. It examines alternative frameworks for understanding conceptions of learning and conceptions of teaching, the theory and practice of action research, and the use of action research to change lecturers' conceptions. It proposes a closer link between theory and practice and more integration between research and development in the way staff development operates, not through staff developers making the links, explaining educational concepts or using research evidence, but through lecturers researching their teaching.

Background

In the late 1970s I was a Research Fellow involved in research into student learning. My colleagues and I wrote for education journals and our work was read by a very small group of fellow researchers in the UK, Sweden and Australia. At conferences researchers talked to researchers. Lecturers did not read this work and little or no practical use was made of it. Practical research tools with considerable potential, such as the Approaches to Studying Inventory (Entwistle and Ramsden 1983) were not taken up by lecturers despite extensive supportive studies. The gap between theory and practice and research and development was very wide indeed.

Throughout the 1980s I worked as a staff developer. Most of the evaluation work I undertook on behalf of lecturers or alongside them was relentlessly pragmatic. It wasn't all trivial and it didn't focus only on teaching. As well as feedback questionnaires on teachers and teaching I helped lecturers
Current titles include:

Ronald Barnett: The Idea of Higher Education
Ronald Barnett: Improving Higher Education
Ronald Barnett: Learning to Effect
Ronald Barnett: The Limits of Competence
Tony Becher: Governments and Professional Education
Robert Bell and Malcolm Tight: Open Universities: A British Tradition?
Hazel Bines and David Watson: Developing Professional Education
Jean Bocock and David Watson: Managing the University Curriculum
David Boud et al.: Using Experience for Learning
Angela Brew: Directions in Staff Development
John Earwaker: Helping and Supporting Students
Roger Ellis: Quality Assurance for University Teaching
Gavin J. Fairbairn and Christopher Winch: Reading, Writing and Reasoning:
   A Guide for Students
Shirley Fisher: Stress in Academic Life
Diana Green: What is Quality in Higher Education?
Jill Johnes and Jim Taylor: Performance Indicators in Higher Education
Ian McNay: Visions of Post-compulsory Education
Robin Middlehurst: Leading Academics
Henry Miller: Managing Change in Universities
Keith Noble: Changing Doctoral Degrees
Gillian Pascault and Roger Cox: Women Returning to Higher Education
Graham Peake: Mission and Change
Moira Peelo: Helping Students with Study Problems
Kjell Raahelm et al.: Helping Students to Learn
Tom Schuller: The Future of Higher Education
Michael Shattock: The UGC and the Management of British Universities
Geoffrey Squires: First Degree
Ted Tapper and Brian Salter: Oxford, Cambridge and the Changing Idea of the University
Kim Thomas: Gender and Subject in Higher Education
Malcolm Tight: Higher Education: A Part-time Perspective
David Warner and Gordon Kelly: Managing Educational Property
Sue Wheeler and Jan Birtle: A Handbook for Personal Tutors
Thomas G. Whiston and Roger L. Geiger: Research and Higher Education
Gareth Williams: Changing Patterns of Finance in Higher Education
John Wyatt: Commitment to Higher Education

The Society for Research into Higher Education & Open University Press
Clarify your assessment criteria and make them explicit so that students are in no doubt that mere memorization will not be rewarded.

- Provide examples of what the outcomes of taking a deep approach (and a surface approach) look like; by copying reports, essays or exam answers and discussing what is wrong and right about them. Orient students towards higher-level goals by providing models of these goals.

- Look for opportunities to increase the amount of exploratory discussion which students engage in. If you lack the teaching resources to offer tutorials, set up autonomous discussion groups or learning teams, or set assignments which require team work.

- Look for opportunities to introduce active learning where it was previously passive – during lectures, for example.

- Try turning flat content into problems and puzzles so that engaging with it is inherently interesting. Look for ways of making reading and routine work engaging by surrounding it with questions and interesting contexts.

- Look for scope to allow students in on decisions about what and how they study. There may be more leeway, within existing curricula and exam regulations, for students to study what interests them, and to undertake assignments of their own choosing, than you think.

- Look for opportunities to encourage reflection, for example through requiring students to write self-assessment comments on their lab reports or essays before they submit them, and through the use of reflective journals, discussed in seminars.

- Look for opportunities to deal with subject matter in larger, more interdisciplinary lumps rather than always in small specialist lumps.

- Take every opportunity to encourage students to discuss what good learning and good teaching consist of, rather than always discussing substantive subject content.

- In evaluating your course, use questionnaires based on research into student learning (cf. Ramsden, 1991) rather than questionnaires which focus on teachers' lecturing performance.

Conclusion

This chapter has argued that the key variable when examining the quality of student learning, that of students' approach to learning, is profoundly important in determining the quality of learning outcomes, and is very extensively influenced by aspects of course design. These aspects do not have much to do with teachers' classroom performance. As class sizes increase, pressures build up which seem to force course design in directions which foster a surface approach and which will inevitably worsen the quality of learning outcomes. However, alternative course design strategies exist which both address large class problems and foster a deep approach. If quality in learning is to be maintained, we must pursue these course design strategies rather than focusing on teachers' classroom behaviour within unchanged conventional courses.

References


the results of standard student feedback questionnaires at the end of the year telling her that her use of audio-visual aids is 'satisfactory'.

Strategies for coping with large classes which foster a deep approach.

The course design strategies listed above which foster a deep approach might at first glance appear anachronistic at a time of rapid increase in student numbers and of the disappearance of one-to-one tutorials or indeed any significant individual support for students. While these strategies may have been usable in the heady well-resourced days of the 1970s, they are surely impossible to employ today. In fact, the case studies in the CNAA project coat ho more to run than their conventional counterparts. Indeed it was a condition of courses’ involvement in the CNAA study that innovations were no more expensive to run than the courses they replaced.

But there is a more important argument here than about the relative costs of strategies. Whatever strategies are adopted, lecturers and institutions will have to deal with the special problems larger classes involve. As class sizes increase, students face any or all of the following problems (Gibbs, 1992b):

1. Lack of clarity of purpose.
2. Lack of knowledge about progress.
3. Lack of advice on improvement.
4. Inability to support wide reading.
5. Inability to support independent study.
6. Inability to cope with variety of students.
7. Inability to motivate students.

Motivation has in the past come from personal contact with lecturers and involvement in small group discussion. When students’ imagination was fired, library and other resources could give it free rein. In large classes, in the absence of either personal contact or small groups, and with inadequate resources to fuel motivation, students are frequently disengaged and passive.

If we were to look at the methods adopted in North American higher education to tackle these kinds of problems, we would find very different kinds of solutions to those which foster a deep approach. In the main we would find ‘control’ strategies (Jenkins and Gibbs, 1992). Subject matter is specified in advance, often in terms of behavioural objectives, and tested with multiple choice questions, often computer marked. Motivation is generated through frequent testing with an emphasis on quantitative results (the grade point average). Access to reading is provided by text books and discussion may not be supported at all. Table 8.1 contrasts ‘control’ and ‘independence’ strategies for dealing with large class problems. It is easy to see which of these is more likely to foster a deep approach. It is also easy to see which are more closely allied to conventional course delivery techniques.

<table>
<thead>
<tr>
<th>Problem area resulting from large classes</th>
<th>Characteristic methods adopted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Clarity of purpose</td>
<td>‘Control’ strategies</td>
</tr>
<tr>
<td></td>
<td>Use of objectives</td>
</tr>
<tr>
<td></td>
<td>Objective testing</td>
</tr>
<tr>
<td></td>
<td>Assignment attachment forms</td>
</tr>
<tr>
<td>2. Knowledge of progress</td>
<td>‘Contol’ strategies</td>
</tr>
<tr>
<td></td>
<td>Use of set books and learning packages</td>
</tr>
<tr>
<td>3. Advice on improvement</td>
<td>‘Follow-the-instructions’ projects</td>
</tr>
<tr>
<td>4. Ability to support wide reading</td>
<td>‘Independent’ strategies</td>
</tr>
<tr>
<td>5. Support of independent study</td>
<td>Structured lectures</td>
</tr>
<tr>
<td>6. Opportunity for discussion</td>
<td>Independent student-led seminars</td>
</tr>
<tr>
<td>7. Variety of students</td>
<td>Variety of levels of support mechanisms including peer support groups</td>
</tr>
<tr>
<td>8. Student motivation</td>
<td>Frequent testing</td>
</tr>
</tbody>
</table>

It is apparent from this analysis of solutions to the problems of large class teaching that few of the solutions have got anything to do with teachers’ classroom performance. However in North America, a large proportion of quality assurance consists of student feedback on teachers’ classroom performance and there seem to be moves in this direction in the UK with lecturers’ teaching being appraised by classroom observation and talk of lecturers’ pay being linked to assessment by students through lecture feedback questionnaires.

Improving student learning

If an individual lecturer wanted to take immediate steps to improve the quality of student learning, what could she or he do? Many of the implications outlined above involve relatively major changes in course design which might involve the co-operation of others, approval and resources, not to mention a long-term perspective on change. Nevertheless, there is scope for individually initiated improvements. The following list is offered, derived from evidence concerning what fosters a surface or a deep approach.

- Review assessment tasks to ensure that good marks cannot be achieved by regurgitation of factual information, but only by understanding.

![Table 8.1: 'Control' and 'independence' strategies](image-url)
One might suspect that first-year students might not undertake the independent work required for a course like this. However, the projects were assessed and there were no other assessment elements and so students could not avoid doing independent work. According to their logs, they spent an average of 153 hours on the module (with a range of 94–268 hours on a module planned as 150 hours' work) and complained that it involved far more work than other modules. They averaged 74 per cent attendance at class/meetings.

The crucial issue here is whether students approached their studying differently on this course than on a parallel conventionally taught Law course. At the start of the two courses, there were no significant differences between students' approaches (as measured by the 'Approaches to Studying' questionnaire). By the end of the semester, students on the parallel Law course 'Law, Justice and the Individual' were taking a surface approach to a significantly greater extent than on the Business Law course and taking a deep approach to a significantly lesser extent. Students' approaches could be clearly identified in interviews. The following is an example of a student taking deep approach on the Business Law module:

You give us something to do which we have not done before, make us go and find out about it. I know that's harder to do but at the end of it when you've done it you feel much better because you feel you've achieved much more. With other assignments, you feel like you have not interested: in it because you think you've covered it before... You're looking for understanding, basically... so you know that we understand what we have written about. We have not just gone away and copied it or it has just gone in one ear and out the other.

This contrasts with the following examples of students taking a surface approach on the conventional Law module:

Well basically it was dictation... we just sit there and [the lecturer] just reads through his notes, we make our notes and... basically just take on the notes and to a large extent switch off.

It is all writing down and we don't have much time for discussion... it's mostly dictation. You can't possibly think about what is being said. It is just a question of trying to decipher it later on.

While students on the Business Law course changed their approach (away from a surface approach and towards a greater deep approach), they did not change at all on the parallel 'Law, Justice and Society' course, so the differences were not simply a matter of maturation or increasing sophistication. These students were responding to the design of the course.

Students' grades were examined to see if they were related to their approach. Students worked in teams on assignments and gained a team grade which was peer-moderated. The average approach scores (on the 'Approaches to Studying' questionnaire) of team members were therefore examined to see if they correlated with average grades of teams. There was a large and significant positive correlation between deep approach scale scores and grades and no correlation between surface approach scale scores and grades. Neither the percentage of class sessions attended nor the total number of learning hours students spent on the module correlated with grades. In other words, the only predictor of performance was their deep approach scale score: the extent to which students attempted to understand the material.

These marked positive effects of the design of the course on student learning were not evident the previous year when the course was being piloted. The main changes which were made after the piloting of the module which are likely to have been influential in this change were:

- Much more attention was paid to the formation and support of the learning groups, which increased co-operative interaction.
- Regular multiple choice tests were dropped as it was felt that they disoriented students towards a surface approach.
- Brief overviews of topics were provided in briefings at the start of each team project as a way of providing a sounder knowledge base for the independent work.

These modifications illustrate the importance of fine tuning in making such innovations effective.

Students' group coursework projects were analysed using the SOLO taxonomy. There was a very close relationship between the extent to which students took a deep approach and the SOLO level of their projects. In other words, the greater the extent to which they took a deep approach, the more sophisticated was the structure of content of their project reports. Students who took a deep approach also gained higher grades.

The important features of the innovation in this case study were the motivating nature of the problems and projects, active learning, interaction between students in project teams and in class, and the integrative way knowledge was acquired. There was also a good deal of fine tuning of classroom techniques and assessment so that processes and desired outcomes were congruent.

All this 'research' evidence, including questionnaire data, interview data, data from students' logs and analyses of the outcomes of student learning using the SOLO taxonomy, was undertaken by a lecturer. The only outside assistance this lecturer received was a briefing and documentation at the start of the year and a meeting to interpret the results at the end. It illustrates a lecturer engaged in rigorous action research using a coherent rationale with a firm base in research on student learning. This contrasts with some models of quality assurance in which a lecturer passively receives
Problem-based learning thereby involves all four elements which foster a deep approach.

It is important to recognize that these nine strategies are not those commonly being used as class sizes increase, a point which will be pursued below.

Case study

The CNAA project Improving Student Learning undertook action research with a wide range of courses with the intention of fostering a deep approach and improving the quality of learning outcomes. The following case study illustrates the ways in which the above strategies were employed in a Law course.

Business Law, Wolverhampton Polytechnic

The case study concerns a one-semester Business Law module in the first year of a BA/BSc Business Information Systems modular degree programme. It is a relatively small course, involving students in about one-quarter of their time for half a year, involving a total of 150 hours learning. The module runs twice a year and the case study looked at its pilot operation and its operation involving changes introduced as a result of the pilot.

Instead of the conventional approach of a lecture and a seminar a week, the course involves setting students up into learning groups and giving them a series of six projects to undertake. The class contact of two hours a week is used to brief and review the group tasks, to support the development of the groups, to develop research skills and to share learning across the groups. Very short lectures are used to introduce the topics addressed by the projects but almost all the content of the course has to be collected by the groups themselves. The following is a description of the programme for the class session for Week 3:

The Waiting Game
Group Game (Structures)
Discussion within groups of progress made on the second project
Plenary session on the second project
Introduction to Employment Law (with group exercises)
Signing of project 2 contract

The six projects (listed below) involve activities in real-world contexts rather than wholly academic tasks.

Project 1. A series of short questions and tasks to establish co-operative group work and identify the nature and uses of legal source material. Questions include: 'Obtain a street map of Wolverhampton and the 1990 Yellow Pages. Plot the location of Solicitors on it. What conclusions can you draw?'

Project 2. The design and construction of a computerized legal advice giver, accompanied by a detailed written analysis of the area of law concerned.

Project 3. The production of a report explaining the rules relating to the formation of registered companies.


Project 5. The design and administration of a questionnaire to evaluate public knowledge of an area of law relevant to consumers and entrepreneurs.

Project 6. An interview with an individual concerned with problems in the area of Business Law, and the preparation and presentation to the individual of a report analysing the relevant Law and proposing a legal resolution to the problem.

The first of the projects is formatively assessed and the other five are summatively assessed. Group project reports are graded and the group members then peer-assess relative contributions to the project and award moderated grades to each other based around the tutor's grade. There is no exam, unlike parallel conventionally taught Law modules.

Students keep a 'learning log' in which they record reflections on their learning of Law. The way students research topics independently is illustrated by this extract from a student's learning log:

12.3.91 Bought The Express and Star... found a range of legal topics, but one that interested me was the death of a woman when doors in a Do-It-Yourself store were not securely placed. Does it relate to Health and Safety at Work or the Tort of negligence? Anyway the court case is tomorrow at 10.00 a.m. ... I think I'll appear to see whether the action will be brought in under negligence or under a breach of a condition of the Health and Safety at Work.

13.3.91 Appeared at the Court...•

3.4.91 Used facilities in Central Lending Library and travelled to DTI in London, various Banks and Business Enterprise Schemes to gather information on the next task.

18.4.91 After the lesson the group went to a small business centre for information on companies. We also went to a business centre in Lichfield Passage.

Students read Law textbooks and consult Law Reports as well. This contrasts with the type of research undertaken on the parallel conventional Law module:

[They have given us a book guide. I think there is a book on the list discussing Marx. I'll probably read the minimum amount necessary... read the introduction and conclusion and skim through the bits in between]

INTERVIEWER: Where are you getting your understanding from?

STUDENT: Well from the lecture notes. Well ideally you are meant to use the lecture notes as a starting point. We get a book list. In an ideal world you would go off to the library and pick up books on the book list. Unfortunately it is not an ideal world.
activity must be planned, reflected upon and processed, and related to abstract conceptions. Conservative approaches to teaching large classes treat students as passive.

3. Interaction with others
It is often easier to negotiate meaning and to manipulate ideas with others than alone. The importance of discussion for learning is not a new idea, though there is precious little discussion in much of higher education. Interaction can take many forms other than conventional tutorials and seminars, and autonomous student groups and peer tutoring can be very effective. Studies have even shown that in peer tutoring the student who does the tutoring learns more than the student who is tutored, confirming the everyday experience that the best way to learn something is to teach it. In large classes discussion is disappearing as seminar groups become ever-larger and tutorials become rarer.

4. A well-structured knowledge base
Without existing concepts, it is impossible to make sense of new concepts. It is vital that students’ existing knowledge and experience are brought to bear in learning. The subject matter being learnt must also be well structured and integrated. The structure of knowledge is more visible to, and more useful to, students where it is clearly displayed, where content is taught in integrated wholes rather than in small separate pieces, and where knowledge is required to be related to other knowledge rather than learned in isolation. Interdisciplinary approaches also contribute to a well-structured knowledge base. While conventional lectures may be able to convey the structure of a subject, they do not involve students in actively relating past and current knowledge into structures.

The extent to which course design, teaching and assessment methods embody these four elements will determine whether they are likely to foster a deep approach. Problem-based learning, for example, embodies all four of these elements. It has been found that while deep approaches to learning decline over time in traditional medical schools (which tend to involve heavy lecture programmes and rote memorization for the first two years), they do not in a medical school using problem-based learning.

Fostering a deep approach

This section identifies nine strategies for improving the quality of student learning by fostering a deep approach. These strategies overlap in several respects and many innovations embody features from several of the strategies. The important features of these strategies are the extent to which they embody the four elements introduced above: a motivational context, learner activity, interactions with others and a well-structured knowledge base. The key features of these strategies are elaborated by Gibbs (1992a).

- **Strategy 1** Independent learning
- **Strategy 2** Personal development
- **Strategy 3** Problem-based learning
- **Strategy 4** Reflection
- **Strategy 5** Independent group work
- **Strategy 6** Learning by doing
- **Strategy 7** Developing learning skills
- **Strategy 8** Project work
- **Strategy 9** Fine tuning

The way these strategies embody the four key elements which foster a deep approach can be seen most clearly by looking at the example of Strategy 3. Problem-based learning involves learning through tackling relevant problems. The goal is learning, not solving the problem; the problem simply provides an engaging context within which learning takes place. This is distinct from learning how to solve problems, in which what is learnt is problem-solving skills, and also distinct from applying knowledge to problems in project work where the learning takes place first and is only then used in the context of a problem. In problem-based learning, there is no prior presentation of subject matter. Students discover what they need to learn about through being confronted with problems, and then learn what they need to in order to be able to tackle the problem. In some applications, the nature of the problem has to be identified by the students who are simply confronted with a situation or evidence and asked, in effect, ‘What is problematic about this?’ In some applications of this method, there is no emphasis on actually ‘solving’ the problem. Problems are simply exploited for their learning potential, after which students move on to the next problem. The main features of the strategy are:

- **Relevant problems.** Problem-based learning is most common in professional courses such as Medicine and Engineering where students are given real-world problems of the kind a professional would be faced with. In well-developed applications, the problems are carefully designed to involve all the important parts of the syllabus. Students may select and negotiate their way through problems in order to make sure that they ‘cover’ the syllabus.
- **A ‘need to know’**. What students go off and learn about is determined by what is necessary to tackle the problem. This generates a great deal of highly focused motivation.
- **Integration of knowledge.** Real-world problems are very often large scale and interdisciplinary. Students do not experience knowledge in artificially discrete packages.
- **Interaction.** Problem-based learning almost always employs groups of students working co-operatively, sharing ideas, dividing up the learning to be done, briefing each other and solving problems co-operatively.
depth interviews, in Sweden, the UK and Australia. Some of the studies have been very large, involving thousands of students and scores of academic departments across a wide range of subject areas and institutions.

The features of courses which are most likely to be found where students tend to take a surface approach are a heavy workload, relatively high class-contact hours, an excessive amount of course material, a lack of opportunity to pursue subjects in depth, a lack of choice over subjects and a lack of choice over the method of study, and a threatening and anxiety provoking assessment system.

As class sizes increase in the UK course delivery is moving towards European and American models, relying ever more heavily on lecturing as small group work becomes harder to resource. Students are being treated as a homogeneous mass and are being given less choice. Assessment is starting to be mechanized in order to save time, relying increasingly on methods such as objective testing which has difficulty in measuring understanding or rewarding the achievement of the higher levels in the SOLO taxonomy. Where open learning materials are adopted as a coping strategy, these often narrow the perceived learning task to one on mastering the text in the learning package. Where assessment taps understanding (as with more open-ended extended written work) it is much less frequent, providing less feedback and so increasing anxiety. The way many courses are responding to increased student numbers seems very likely to foster a surface approach in students.

Students’ perceptions of teaching

Students have been asked, in studies, what they think good teaching consists of. Some think that the teacher should do all the work and make all the decisions. The teacher should select the subject matter, present it in teacher-controlled classes, devise tests and mark students on how well they have learnt the material which has been presented. What is to be learnt and what learning outcomes should look like is completely defined by the teacher (a ‘closed’ conception of teaching). Others think that while the teacher has responsibility for setting the learning climate, for making learning resources available, and for supporting students, all the responsibility lies with the students: responsibility for selecting learning goals, devising appropriate learning activities and for judging when learning outcomes are satisfactory (an ‘open’ conception of teaching). It will come as no surprise to learn that the former, ‘closed’, conception of teaching is held almost exclusively by students with conceptions of learning concerned with memorization, while the latter, ‘open’, conception of teaching is held by students with conceptions of learning concerned with understanding.

The issue then is whether students see ‘closed’ teaching as good because they have a reproductive conception of learning, or whether they have a representative conception of learning because they have been experiencing ‘closed’ teaching. I believe the latter explanation and that implicit in course design and teaching methods are underlying assumptions about what learning and knowledge itself consists of. Students pick up these implicit assumptions and adopt them.

One consequence of the kinds of teacher-centered courses which are being used to cope with large classes is, therefore, likely to be the development in students of a closed conception of teaching and a reproductive conception of learning. It is already becoming commonplace for students in large courses to express very conservative views about innovations in teaching and great anxiety if alternatives to lecturing are suggested. Some student-centered innovations are having to be abandoned due to opposition from anxious students. I believe their opposition is rooted in their unsophisticated understanding of what teaching and learning consist of and which the conventional course delivery methods have induced. Even third-year undergraduates can be terrified of independence in learning because they have experienced undiluted teacher-centered methods for the previous two years.

Course design for a deep approach

Studies have identified a number of factors which are, in effect, the obverse of factors which foster a surface approach, such as intrinsic interest in the subject and freedom in learning. Freedom may involve choice over content or method of learning or scope for intellectual independence. A crucial additional factor is ‘perceived good teaching’. What ‘good teaching’ consists of has been identified through many studies of teaching processes which are associated with a deep approach. Four key elements have been identified and none concern lecturer’s classroom performance:

1. Motivational context
A deep approach to learning is more likely when students’ motivation is intrinsic and when the student experiences a need to know something. Adults learn best what they need to learn in order to carry out tasks which matter to them. Students are likely to need to be involved in selecting what is to be learnt and in planning how the learning should take place if they are to experience ‘ownership’ of it. The motivational context is established by the emotional climate of the learning. While a positive emotional and motivational climate may be a necessary condition for deep learning, anxiety and instrument-alism may be sufficient conditions for surface learning. Conservative approaches to teaching large classes lead to alienation and low motivation.

2. Learner activity
Students need to be active rather than passive. Deep learning is associated with doing. If the learner is actively involved, then more connections will be made both with past learning and between new
The answer relates components together to make a case or logical whole.

**Extended abstract**

In addition, a connection to a related area of knowledge beyond the explicit demand of the question.

These categories have an intuitive relation to degree categories. Level 3 answers gain a pass, or if the list is long enough, a lower second, level 4 answers gain upper seconds and level 5 answers gain firsts.

**Approach and outcome**

The significance of qualitative measures of outcome become apparent when they are used to measure the consequences of taking a deep or a surface approach to learning. In one study, for example, 69 students read a chapter and then wrote an account of it. They were interviewed about their approach and the structure of their account was analysed using the SOLO taxonomy, revealing the following pattern of results:

<table>
<thead>
<tr>
<th>Approach</th>
<th>Surface</th>
<th>Deep</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLO level 3</td>
<td>35</td>
<td>6</td>
</tr>
<tr>
<td>SOLO level 4</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>SOLO level 5</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

After Van Roosin and Schenck (1984)

In other words none of the students who took a surface approach produced anything other than a list-like answer, whilst most (28 out of 34) of those who took a deep approach produced answers involving logical arguments and relationships between ideas.

**The consequences of a surface approach**

As ways have been developed of identifying the quality of students' understanding, so it has been possible to study, under controlled conditions, the impact of a deep or a surface approach on the quality of learning outcomes. It has become abundantly clear that it is very unlikely that a student who takes a surface approach will gain a full understanding of a concept, an overview of a topic, a grasp of the main ideas in a chapter, be able to distinguish principles from examples, write an essay with a logical argument, or recognize the key ideas in a lecture. Essays, or summaries of chapters, in structure to those of students who have taken a deep approach. A surface approach produces a multistructural essay (containing a list of unrelated items) while a deep approach usually produces a relational answer (integrating items into a structure) or an extended abstract answer (which goes beyond the immediate topic and applies ideas to a related issue or area).

It may be argued that full understanding is not always required, and that an ability to memorize without understanding is sometimes enough. Studies have shown that a surface approach does tend to produce marginally higher scores on tests of factual recall immediately after studying. However this small advantage is quickly lost. A surface approach leads to rapid forgetting and as little as a week later students who have taken a deep approach will score far higher than those who took a surface approach, even on tests of factual recall.

A surface approach is no more successful in passing entire courses or gaining qualifications. Both interview and questionnaire studies have shown that students who take a surface approach gain lower marks and poorer degree results and are more likely to fail. The effects are often quite dramatic. Given the limited correlation between students' A Level scores, intelligence and study skills and their performance in higher education, evidence of the link between students' approach to study and their performance is especially significant.

These studies have spanned subject areas as diverse as the humanities, Science, Computing and Social Science, in four different countries, using different research methods. They have spanned small specialist courses and large undergraduate degree programmes containing over 40 disciplines and over 2000 students (cf. Entwistle and Ramsden, 1983). The range and diversity of these studies leaves no doubt that a surface approach has a disastrous impact on the quality of learning outcomes.

**Course design can foster a surface approach**

If a surface approach is such a problem, then it is important to understand where it comes from. For some students, it seems to be a consequence of an unsophisticated conception of learning and a misunderstanding of the demands of the course. But most students can take either a surface or a deep approach. The examples given earlier in this chapter illustrating a deep and a surface approach did not come from two different students but from one student taking two different courses. He has simply responded strategically to the perceived demands of the two courses. What matters here is what it is about courses which can lead competent students to take such an extreme surface approach, with all the negative consequences this has for learning.

Many studies have looked at the relationship between the approach students take to their courses and a number of features of the courses in order to identify what it is about courses which affects students. Studies have
The project was established to demonstrate the application of this research to the practical business of improving courses. Institutions responsible for over 100 courses applied to be involved and eight were selected to be funded to undertake detailed action research projects. The innovations based on principles from the earlier research into student learning were undertaken during the 1990–91 academic year and dissemination of the findings took place in the spring of 1992. The following sections selectively and briefly outline the research basis of the GNAA project.

**Students' approaches to learning**

Consider these two quotations from interviews with students. The first student is describing how he went about reading a book:

> In the interview extract below a student has just described taking verbatim notes in a lecture and has used the word 'learning':

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

**STUDENT:** Getting enough facts so that you can write something relevant in the exam. What I normally do is learn certain headings. I'll write a question down, about four, five different headings, which in an exam I can go: 'Introduction' and 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. I go to the next heading and regurgitate.

These quotations illustrate extreme differences in intention: the students are trying to achieve different things. These two intentions have been termed a deep approach and a surface approach (Marton and Saljo, 1976).

- **Deep approach**
  The student attempts to make sense of what is to be learnt, which consists of ideas and concepts. This involves thinking, seeking integration between components and between tasks, and 'playing' with ideas.

- **Surface approach**
  The student reduces what is to be learnt to the status of unconnected facts to be memorized. The learning task is to reproduce the subject matter at a later date (e.g. in an exam).

or perhaps in poor students in the first year in higher education, it is not really an issue beyond that. It is assumed to be a problem which automatically goes away with maturity and experience. This is not the case. Evidence of the prevalence of a surface approach is deeply disturbing. In the UK a surface approach is common in all subject areas, and more common in universities than in polytechnics (Ramsden, 1983). In higher education in Australia, students progressively drop a deep approach as they move through the three years of a degree programme. This phenomenon is more marked in colleges of advanced education than in universities, more common in science than in arts, and more common in undergraduates who do not intend to continue on to postgraduate studies than in those who do.

**Student learning outcomes**

The outcomes of student learning - what it is that they have learnt - also differ greatly in quality, and quantitative measures of student learning outcomes may reveal little about this quality. The first year of undergraduate courses in physics and chemistry commonly repeat much of the A Level syllabuses because although students who have got good A Level grades can substitute numbers in formulae, follow algorithms for solving standard problems and remember the definitions of terms, they do not adequately understand the concepts involved. When the quality of learning outcomes is examined through interviews this frequently reveals a very different picture than that revealed by examinations where students can accumulate marks for memorization.

There is now a considerable body of evidence of the lack of understanding of key concepts of students who have successfully passed courses, in a variety of subjects and at a variety of levels (cf. Dahlgren, 1984). For example, a study of a first-year undergraduate economics course found that few students had understood a range of other key economics concepts. Indeed, the quality of understanding of several concepts was actually poorer at the end of the course than before the course started. Results on a conventional exam, which rewarded regurgitation of information, revealed little of this failure.

The Structures Of Learning Outcomes (SOLO) taxonomy is a research-based measure of the quality of learning outcomes (cf. Biggs and Collis, 1982) and is a widely applicable framework for judging the structure of essays, answers to technical questions, medical diagnoses or students' accounts of their reading:

- **Level 1: Ignorance**
  The learner reveals no correct knowledge about the question.

- **Level 2: Unistructural**
  The answer contains one correct feature or item of information.

- **Level 3: Multistructural**
  The answer is list-like, containing a number of unconnected items.
pedagogically, in terms of what students learn as a result. And these points hold good both for prior experiential learning and for current experiential learning organized by institutions as an integral part of degree studies. The points hold good because students can be so powerfully motivated. And that is why for many students it can be claimed that experiential learning when incorporated into the work of academic institutions offers a superior education. In essence, experiential learning is a particularly striking form of learning to effect.

Notes.

1. As evidence from Napier and Huddersfield Polytechnics testifies.
2. The Assessment of Prior Experiential Learning - Report of a CNAA Development Fund project conducted at the Learning from Experience Trust by Norman Evans (CNAA, 1988). Participating institutions were: City of Birmingham Polytechnic; Bristol Polytechnic; Essex Institute of Higher Education; Newcastle upon Tyne Polytechnic; Polytechnic of North London; Sheffield City Polytechnic; Stockport College of Technology; The Polytechnic, Wolverhampton; Middlesex Polytechnic and Thames Polytechnic.
6. This touches the wider question as to the origins of knowledge in the context of the rapidly changing nature of higher education in the UK. For contemporary discussion see the Higher Educational Supplement, Peter Scott: Editions, 9, 16 and 23 August 1991.

10

Improving the Quality of Student Learning through Course Design

Graham Gibbs

Introduction

Research in Europe and Australasia has identified students' approach to study as a key variable in predicting student performance and the quality of learning outcomes. Whether students take a surface or a deep approach (attempting to reproduce subject matter or understand it) has a profound effect on the quality, structure and permanence of students' learning. This research has also identified the features of course design which foster a surface approach, often inadvertently, or which can be used to foster a deep approach through deliberate and purposeful course re-design. A project entitled Improving Student Learning, sponsored by the Council for National Academic Awards (CNAA) has studied a wide range of attempts to move students from a surface to a deep approach and has provided detailed case studies of the processes of change involved. This chapter describes the background research and one of the case studies in order to illustrate appropriate course design changes.

The chapter explores the potentially damaging impact on course delivery, and hence on students' approaches to studying, of the worsening staff-student ratio and increasing class sizes in the UK. It will point to course design strategies which hold out most promise of retaining quality in learning whilst the unit of resource declines. It also emphasizes that a focus on teachers' performance, highlighted by annual appraisal, observation of teaching and superficial teacher evaluation undertaken to satisfy academic audit, is unlikely to orient change appropriately. What is needed is a clear focus on course design with a conceptual grounding in research on student learning.

The CNAA project: improving student learning

Research on how students learn in higher education, how they develop and change, and what influences their approaches to learning, has over the past 15 years provided a coherent, rich and illuminating picture (cf. Ramsden,
Learning to Effect

Edited by Ronald Barnett
References


Biographical notes

GRAHAM GIBBS is Director of the Institute for the Advancement of University Learning, at the University of Oxford and was previously Professor and Director of the Centre for Higher Education Practice at the Open University. He has been involved in designing, running and evaluating programmes for new university teachers since 1980. He has visited programmes in many universities in many countries and has published comparative studies of national practices. He has been concerned with strategy and policy about improving university teaching, at both a national and institutional level.

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MARTIN COFFEY is a Chartered Occupational Psychologist who combines working on a freelance basis, with a half-time post as a Lecturer in Occupational Psychology at the University of Leicester. He teaches exclusively on distance learning programmes. Following from his research into the benefits of educational development programmes, with Professor Gibbs, his current research interest is in the development and evolution of teams in academic settings.
rather than some years later, as happens in some institutions, in order to
avoid the development of negative values and a Teacher Focus early in a
teacher’s career.

The institutions studied that provided extensive initial training often also
provided other forms of support for teachers, such as discussion of student
feedback, seminars and conferences on teaching, departmental mentors,
generally more positive attitudes to teaching and even the prospect of
reward and promotion for excellent teaching at some time in the future.
These and other forms of support and encouragement may well have
contributed to the positive changes in the teachers identified in this study.
We are still not in a position to demonstrate that it was the training
itself that resulted in the positive changes, merely that those institutions
that had training also had teachers who improved.

An attempt was made to categorize the type of training used in each
institution according to their espoused goals (such as improved teaching
skills or developing more sophisticated conceptions of teaching) and to
see if different types of training could be identified as having different
outcomes, as measured by the tools used in this study. However, this proved
impossible because:

- most training programmes claimed to have multiple goals, and used
  varied training tactics, so it was impossible to categorize any programmes
  as having a single distinctive rationale or process;
- there was insufficient data from most individual programmes to identify
  significant differences before and after, or to distinguish between the
  achievement of different goals.

It might be argued by teacher accreditation bodies, such as the ILT, that
the data reported here validates the accreditation process — after all,
teachers who completed accredited programmes were demonstrably better
than those who undertook no such accredited training. However, the
majority of current ILT members have achieved their accredited status by
‘direct entry’ — they are experienced teachers who did not undertake
training at the start of their careers but who have presented a brief port­
folio of evidence of competence for accreditation. It is not yet known
whether these ILT members are as effective as teachers, as indicated by the
measures used here, as the much less experienced training group, or
whether they are only as effective as the untrained control group. There
was insufficient data to compare with the impacts of accredited and unac­
credited programmes.
In contrast, there was no change in the approach to study of students of teachers in the control group, who received no training (Deep Approach: \( t = 0.19 \); Surface Approach: \( t = 0.70 \), n.s. in each case).

**Discussion**

The data presented here provide support for the following conclusions:

- Training can increase the extent to which teachers adopt a Student Focus (as measured by the ATI). Without the support of training, teachers may move in the opposite direction and reduce the extent to which they adopt a Student Focus. A Student Focus approach is known to be associated with students taking a deep approach to a greater extent, and hence to improved quality of student learning outcomes, and so this is an important finding.

- Training can improve a number of aspects of teachers’ teaching, as judged by students (measured by five scales of the SEEQ and the ‘Good Teaching’ scale of the MEQ). Without the support of training, changes may be insignificant or (as evident in the SEEQ scale ‘Group Interaction’) negative.

- Training can change teachers such that their students’ improve their learning (as measured by improved scores on the ‘Learning’ scale of the SEEQ and reduced scores on the ‘Surface Approach’ scale of the MEQ, though trained teachers’ students did not significantly increase their Deep Approach scale scores). Without the support of training no such positive change in student learning is evident.

Whereas the positive impact of training is easy to understand, the sometimes negative impact of no training requires some explanation. Interviews with trainees in several institutions revealed a marked difference in attitudes and values between their academic departments and the training programme. On the training programmes teaching was seen to be valued and the improvement of teaching encouraged. Innovation and change were supported and openly discussed. In contrast trainees reported that in their departments teaching was often not valued and that there was pressure to conform to largely teacher-focused teaching conventions (such as didactic lecturing and testing of acquisition of subject content). Change was sometimes frowned upon and taken to imply criticism of more experienced colleagues. The training programme provided a kind of ‘alternative culture’ that counter-balanced the negative influences of the culture of teachers’ departments. In the absence of a training programme this negative influence of departments went unchecked. If this explanation is plausible it would justify such training taking place at the very beginning of a teacher’s career.
above in teachers’ approach was reflected in changes in their students’ approach (Table 7).

As can be seen in Table 7, students took a surface approach to a significantly lesser extent after their teachers had been trained. However, although they took a deep approach to a greater extent, this change was small and not significant. Possible reasons for this relative lack of change in students’ approach include:

• a ceiling effect: deep approach scores were already high at the start (the maximum score being 30);
• a delay before changes in teachers’ approach to teaching can significantly affect their students’ approach to study. Changing courses in such a way that students’ approach to study is significantly changed can be difficult for new teachers, even if they understand what is required and wish to make these changes, because they lack authority to make such changes, particularly to assessment arrangements, and because such changes may require formal approval and more time to implement.

Table 6  SEEQ ‘Learning’ scale scores, before and after, of the training group and control group

<table>
<thead>
<tr>
<th>SEEQ Scale (Group)</th>
<th>Mean Score</th>
<th>SD</th>
<th>N</th>
<th>t</th>
<th>p</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning (Training Group)</td>
<td>7.08</td>
<td>&lt;.001</td>
<td>Better</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before</td>
<td>14.9</td>
<td>2.8</td>
<td>1641</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After</td>
<td>15.7</td>
<td>2.9</td>
<td>636</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning (Control Group)</td>
<td>0.07</td>
<td>n.s.</td>
<td>Same</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before</td>
<td>15.8</td>
<td>2.8</td>
<td>339</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After</td>
<td>15.9</td>
<td>2.8</td>
<td>141</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7  Student’s approach to study before and after their teachers had been trained

<table>
<thead>
<tr>
<th>Surface Approach</th>
<th>Deep Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Score</td>
<td>SD</td>
</tr>
<tr>
<td>Before</td>
<td>18.5</td>
</tr>
<tr>
<td>After</td>
<td>17.5</td>
</tr>
<tr>
<td>Change</td>
<td>-1.0</td>
</tr>
<tr>
<td>t</td>
<td>.40</td>
</tr>
<tr>
<td>p</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>
### Table 5  Comparison before and after SEEQ scale scores from the training group and control group

<table>
<thead>
<tr>
<th>SEEQ Scale (Group)</th>
<th>Mean Score Before</th>
<th>SD</th>
<th>N</th>
<th>t</th>
<th>p</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enthusiasm (Training Group)</td>
<td>15.1</td>
<td>3.2</td>
<td>1633</td>
<td>5.10</td>
<td>&lt;.001</td>
<td>Better</td>
</tr>
<tr>
<td>After</td>
<td>15.8</td>
<td>3.5</td>
<td>640</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enthusiasm (Control Group)</td>
<td>16.1</td>
<td>3.2</td>
<td>334</td>
<td>1.87</td>
<td>n.s.</td>
<td>Same</td>
</tr>
<tr>
<td>Before</td>
<td>16.7</td>
<td>3.5</td>
<td>148</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization (Training Group)</td>
<td>14.9</td>
<td>2.9</td>
<td>1818</td>
<td>6.94</td>
<td>&lt;.001</td>
<td>Better</td>
</tr>
<tr>
<td>Before</td>
<td>15.5</td>
<td>3.0</td>
<td>631</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After</td>
<td>15.5</td>
<td>3.0</td>
<td>332</td>
<td>0.41</td>
<td>n.s.</td>
<td>Same</td>
</tr>
<tr>
<td>Organization (Control Group)</td>
<td>15.5</td>
<td>3.1</td>
<td>141</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before</td>
<td>16.1</td>
<td>3.6</td>
<td>1637</td>
<td>3.23</td>
<td>&lt;.01</td>
<td>Better</td>
</tr>
<tr>
<td>After</td>
<td>16.1</td>
<td>3.5</td>
<td>634</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group (Training Group)</td>
<td>16.2</td>
<td>3.6</td>
<td>237</td>
<td>6.41</td>
<td>&lt;.001</td>
<td>Better</td>
</tr>
<tr>
<td>Before</td>
<td>16.5</td>
<td>3.2</td>
<td>1597</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After</td>
<td>16.5</td>
<td>3.2</td>
<td>612</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group (Control Group)</td>
<td>16.3</td>
<td>3.2</td>
<td>314</td>
<td>0.30</td>
<td>n.s.</td>
<td>Same</td>
</tr>
<tr>
<td>Before</td>
<td>16.4</td>
<td>3.1</td>
<td>136</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After</td>
<td>14.6</td>
<td>2.9</td>
<td>1586</td>
<td>2.53</td>
<td>&lt;.05</td>
<td>Worse</td>
</tr>
<tr>
<td>Rapport (Training Group)</td>
<td>14.6</td>
<td>2.9</td>
<td>1586</td>
<td>7.44</td>
<td>&lt;.001</td>
<td>Better</td>
</tr>
<tr>
<td>Before</td>
<td>15.3</td>
<td>3.0</td>
<td>627</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After</td>
<td>15.2</td>
<td>3.0</td>
<td>314</td>
<td>1.72</td>
<td>n.s.</td>
<td>Same</td>
</tr>
<tr>
<td>Rapport (Control Group)</td>
<td>15.7</td>
<td>2.6</td>
<td>136</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Students' learning and approach to study**

One scale of the SEEQ concerned Student Learning. The training group's scores on this scale increased significantly while the control group's scores were unchanged (Table 6).

The Deep and Surface Approach scores of the students of the trainee teachers in the training group were examined to see if the changes reported
Table 4  Comparison of the approach of the training group and control group after one year

<table>
<thead>
<tr>
<th>Teacher Focused</th>
<th>Student Focused</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Score</td>
<td>SD</td>
</tr>
<tr>
<td>Training group</td>
<td>21.7</td>
<td>6.4</td>
</tr>
<tr>
<td>Control group</td>
<td>23.9</td>
<td>7.7</td>
</tr>
<tr>
<td>Difference</td>
<td>+2.2</td>
<td></td>
</tr>
<tr>
<td>t</td>
<td>-1.0</td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>n.s.</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1  Approach to teaching scores of the training group and control group, before and after training

Teaching skills
The training and control groups' scores on the five scales of the SEEQ, which concerned teaching skills, were compared before and after training (Table 5). The training group's scores improved significantly on all five scales. In contrast, the control group's scores did not change significantly except for the scores for 'Group Interaction', which worsened significantly. Scores on the other four scales improved for the control group, although not significantly so, and less, on every scale, than for the training group. The maximum score on each scale is 30.

One scale of the MEQ concerned 'Good Teaching'. Although the 'Good Teaching' scale score increased significantly for the training group ($t = 3.21$, $p < .01$) this was not the case for the control group ($t = 0.09$, n.s.).
analyses reported therefore include all teachers in the training group, whether or not they contributed both before and after data.

In contrast to the training group, the teachers in the control group, who experienced no training, changed in the opposite direction: they became more Teacher Focused and less Student Focused (see Table 3), though these changes were not significant due to the small sample size.

As stated above, the control group did not differ significantly from the training group at the start. However, one year later they did differ, being significantly less Student Focused than the training group (Table 4).

Figure 1 plots the above data and shows:

• the changes in the approaches to teaching of the training group between the start of training and one year later;
• the contrasting changes over time in the untrained control group.

### Table 2  Approach to teaching before and after training of matched pairs of teachers in the training group

<table>
<thead>
<tr>
<th>Teacher Focused</th>
<th>Student Focused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Score</td>
<td>Mean Score</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Before</td>
<td>After</td>
</tr>
<tr>
<td>22.5</td>
<td>21.8</td>
</tr>
<tr>
<td>5.9</td>
<td>6.5</td>
</tr>
<tr>
<td>97</td>
<td>97</td>
</tr>
<tr>
<td>Change</td>
<td></td>
</tr>
<tr>
<td>-0.7</td>
<td></td>
</tr>
<tr>
<td>t</td>
<td></td>
</tr>
<tr>
<td>-0.87</td>
<td></td>
</tr>
<tr>
<td>p</td>
<td></td>
</tr>
<tr>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 3  Approach to teaching of the control group at the start of teaching and one year later

<table>
<thead>
<tr>
<th>Teacher Focused</th>
<th>Student Focused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Score</td>
<td>Mean Score</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Before</td>
<td>After</td>
</tr>
<tr>
<td>23.2</td>
<td>23.9</td>
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<td>7.7</td>
<td>7.7</td>
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<td>16</td>
<td>10</td>
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<tr>
<td>Change</td>
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<tr>
<td>+0.7</td>
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<tr>
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<tr>
<td>-0.23</td>
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</table>

94
different from those of the teachers in the training group. The approach to study of the students taught by teachers in the training and control groups did not differ at the outset (Deep Approach: $t = 0.24$; Surface Approach: $t = 1.72$, n.s. in each case).

Results

Approach to teaching

Training group scores on the two scales of the ATI (Teacher Focus and Student Focus) were calculated and compared before and after training. It can be seen from Table 1 that the training group became less Teacher Focused and more Student Focused by the end of the training. The before–after difference for Student Focus scores was statistically significant. The maximum score on each scale is 40.

It is possible that those trainee teachers who completed the training and contributed to the 'after' data were different from those that did not contribute to the 'after' data, for example, in their motivation to improve their teaching. The approach to teaching, before the training, of completing and non-completing trainee teachers, was therefore compared. No differences were found in either Teacher Focus or Student Focus scores ($t = -0.78, -1.70$, respectively, n.s. in each case).

As a second check on the validity of the 'after' data, a comparison was undertaken of matched pairs of before and after data just for those trainee teachers who completed the ATI both before and after training (see Table 2).

Table 2 displays an almost identical pattern of change to that for the entire training group, so there does not appear to be any difference between those who provided both before and after data and those who did not. All

<table>
<thead>
<tr>
<th></th>
<th>Teacher Focus</th>
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<th>Student Focus</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mean Score</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td><strong>Before</strong></td>
<td>22.6</td>
<td>5.7</td>
<td>219</td>
</tr>
<tr>
<td><strong>After</strong></td>
<td>22.1</td>
<td>6.3</td>
<td>104</td>
</tr>
<tr>
<td><strong>Change</strong></td>
<td>-0.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$t$</td>
<td>0.71</td>
<td></td>
<td></td>
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<tr>
<td>$p$</td>
<td>n.s.</td>
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Table 1: Approach to teaching before and after training of the entire training group.
Sample and control group

It was intended to involve 20 trainee teachers from each of 20 universities (i.e. 400 trainee teachers) and to obtain data from 20 students for each of these trainees. Despite much communication and organization, and many visits, the total sample of trainees at the start was 235, because recruitment on the training programmes was lower than 20 in some cases; one university was excluded from the sample because all the 'trainee' teachers were already very experienced. Because of drop-out from the programmes, and other difficulties, the total sample of trainee teachers providing full data for the ATI one year later was 104.

A control group was included which consisted of newly appointed teachers at two universities at which there was no training or organized support for new teachers. The teachers involved in this control group, and their students, were administered the questionnaires in the same way as the training group – near to the start of the first year of teaching and one year later. It proved difficult to identify universities that could provide a control group and even more difficult to gain and retain commitment to being involved in the study. The control group is therefore small, with the number of teachers equivalent to 2 of the 20 training programmes involved in the study.

There were differences between the control group and the training group for some 'before' mean scale scores on the SEEQ – for example, the control group had relatively high 'Enthusiasm' scores on the SEEQ. However, there were also differences between universities within the training group. These may have reflected different cultural and linguistic patterns in responding to the questions – after all five different languages were involved and only one country translated the questionnaires from English into their own language. These inter-university differences in absolute scores are hard to interpret. For the analyses undertaken below all the training group data are combined. With only two universities in the control group too much should not be read into any differences in mean scale scores between the control group and the training group. What matters here are any differences between the control and training groups in terms of the size or direction of change between before and after scores, rather than differences in absolute scores before or after.

The control group was compared with the training group to check that they were not different at the start of the year being studied (e.g. as a consequence of teaching in a different institutional environment). The control group did not differ from the training group either in their Teacher Focus scores or Student Focus scores at the start of training ($t = 0.57$ and $1.58$, respectively, not significant [n.s.] in each case). A check was also made to ensure that the students of the teachers in the control group were not
Student learning: The students learned something which they considered valuable.

The second of the questionnaires administered to students was the Module Experience Questionnaire (MEQ) developed from the Course Experience Questionnaire (Ramsden, 1991) used very widely in Australia. Data from use of the following three scales of the MEQ are reported here, each illustrated with a typical item:

Surface Approach: When I'm reading I try to memorize important facts which may come in useful later.

Deep Approach: I generally put a lot of effort into understanding things which initially seem difficult.

Good Teaching: The lecturers were extremely good at explaining things.

The questionnaire administered to the trainee teachers was the Approaches to Teaching Inventory (ATI; Trigwell, unpublished). This questionnaire has been validated for use in the UK by the authors (Gibbs and Coffey, under review). The ATI measures the extent to which teachers have Teacher-Focused and Student-Focused approaches to teaching. Sample items include:

Teacher Focus: I feel it is important to present a lot of facts in classes so that students know what they have to learn for this subject.

Student Focus: In lectures in this subject, I use difficult or undefined examples to provoke debate.

Teacher Focus and Student Focus are independent scales (just as Surface Approach and Deep Approach are independent scales and not opposite ends of a single scale), and it is possible for a teacher to score highly on both scales at the same time.

The questionnaires for the trainee teachers were administered by the trainers: normally educational development staff in a special centre or unit concerned with pedagogy. The questionnaires for the students were administered by the trainee teachers themselves. Questionnaires were anonymized with codes and returned to the authors at the Open University. The questionnaires were machine read, data were collated and an individual report produced:

- for each trainee teacher, showing their own scores, the average scores of their fellow trainee teachers on their programme, and average scores of all trainee teachers in the study;
- for each trainer, showing the average of the scores of their trainee teachers and the averages for all other training programmes.

It was, in some cases, possible to visit the institutions involved to explain and discuss results with those involved.
Method

Following a substantial pilot involving in-house in-service training programmes for university teachers in 10 universities in England, in 1998/99, a larger scale study was conducted in 1999/2001 involving 20 universities in 8 countries. Each university had a training programme that was at least 60 hours in duration (the longest being about 300 hours). These programmes were coherent series of meetings and learning activities spread over a period of 4 to 18 months, usually with an element of formal assessment. Many were also Postgraduate Certificate courses subject to formal academic approval and quality assurance including, in the UK, external examiners' scrutiny of assessment standards. Most programmes were for teachers near the beginning of their teaching careers although some also included more experienced academics, and some included postgraduate teaching assistants with limited teaching experience. Each of the trainee teachers on these programmes had concurrent teaching and their own students. Universities wishing to be involved in the study that had a less substantial programme involving, for example, a loose collection of free-standing training workshops, were excluded. The programmes studied had very varied goals, rationales and training processes.

All but two of the universities involved were visited and the authors met the trainers and trainee teachers to explain the research process and elicit their commitment. This article reports the administration of three questionnaires: one to the trainee teachers and two to their own students. Each questionnaire was administered twice: once as near as practicable to the start of the training and the trainee teachers' own course, and once approximately one year later, after the training was complete. The student questionnaire was administered to students on a trainee teachers' course at the start, and, where possible, to different students on the same course, at the same point in the course, one year later. These were, therefore, different students but studying the same course taught by the same teacher.

The first of the two questionnaires administered to students was the SEEQ. A subset of six scales from the SEEQ has been validated for use in the UK by the authors (Coffey and Gibbs, 2000). Five of the scales concern skills, listed here with a typical questionnaire item to illustrate each scale:

- **Enthusiasm**: The teacher was enthusiastic about teaching the course.
- **Organisation**: The teacher's explanations were clear.
- **Group interaction**: Students were invited to share their ideas and knowledge.
- **Rapport**: The teacher had a genuine interest in individual students.
- **Breadth**: The teacher contrasted the implications of various theories.

A sixth scale was selected as it concerns impact on students:
Other common goals of training, such as developing teachers’ ability to reflect and be self-improving, or to increasing self-confidence or self-efficacy, were not studied.

Much training is explicitly oriented towards developing teachers’ teaching skills, especially their classroom practice. Measures of teaching behaviour have been shown to correlate with various measures of learning outcome. A well-developed and widely used American student feedback questionnaire was selected which concentrated on ‘low inference’ teaching behaviours, in order to increase reliability, and which has been shown to correlate with learning outcomes: the Student Evaluation of Educational Quality (SEEQ) (Marsh, 1982).

Some trainers are primarily oriented towards improving student learning, rather than towards improving teaching, and so their training is oriented towards changing teachers so that they, too, are oriented towards student learning rather than towards teaching as performance. Trigwell et al. (1974) described different ‘approaches’ that teachers take towards teaching. They have identified two main approaches: Teacher Focus (in which the teacher is concerned primarily with the organization, presentation and testing of content and their own teaching behaviour, with the goal that students acquire information) and Student Focus (in which the teacher is concerned primarily with supporting student learning, so that they acquire or develop concepts).

A teacher’s approach to teaching has been shown to relate to the approach to study of their students: student-focused teachers are more likely to have students who take a deep approach (attempting to make sense of content) rather than a surface approach (attempting to remember content) (Trigwell et al., 1999). Students who take a deep approach have been shown, in a wide range of studies, to have superior learning outcomes, particularly in terms of understanding and developing new and more sophisticated conceptions of the subject. When trainers are oriented towards changing the teachers’ approach to teaching they can, therefore, have a reasonable expectation that, if they are successful, this will improve both student learning processes and outcomes. In a detailed study of a training programme designed explicitly to change teachers’ conceptions of teaching, Angela Ho has demonstrated this chain of influence through training goals and training processes, to teachers’ approaches and to their students’ approaches (Ho et al., 2001).

This article reports a three-year international study of the training of university teachers which is concerned with identifying any changes in teachers’ behaviour and approaches to teaching and their students’ approaches to learning, which could be attributed to the training.
contrasting lack of change, or negative changes, in untrained teachers from the control group.

**KEYWORDS:** approaches to learning, evaluation of teaching, teacher training, teaching effectiveness

**Introduction**

Initial training of university teachers is now established in every university in the UK, Norway and Sri Lanka and is becoming increasingly common in many other countries. From being small in scale, low in credibility and poorly supported, substantial training of 120–500 hours duration is now well embedded in many institutions, is often compulsory and is sometimes linked to probation or tenure. Increased confidence in the value of such training has not, however, been based on solid evidence. Reviews of research into the training of university teachers have concluded that there is little evidence regarding the impact of training on teaching and even less evidence of impact on student learning (Gilbert and Gibbs, 1999; Weimer and Lenze, 1997). Such evidence as exists tends to involve self-reports of change from teachers, either through ad hoc programme evaluation questionnaires or through group discussion and interview. Studies tend not to obtain evidence from theoretically or psychometrically based questionnaires, obtain evidence from students or obtain evidence about impact on student learning, which is the ultimate purpose of training. This is the first published study that combines psychometric data from a number of training programmes and includes a control group so as to be able to measure impact.

The term 'training' may summon up images of military drills, but in practice the training of university teachers often involves relatively sophisticated processes underpinned by theoretical models of professional development (Schon, 1987) and change over time in teachers' conceptions of teaching (Trigwell et al., 1994). Trainers are often articulate about what they are trying to achieve and sophisticated about their training methods, even if they are not yet sophisticated about finding out whether they are successful.

A framework for analysing the goals and rationales of training programmes, developed by Gibbs and Coffey (2000) from in-depth interviews with trainers, has identified a range of training goals. This article is concerned with the extent to which training is capable of achieving three of these goals:

- the improvement of teachers' skills;
- the development of teachers' conceptions of teaching and learning;
- consequent changes in students' learning.
The impact of training of university teachers on their teaching skills, their approach to teaching and the approach to learning of their students

GRAHAM GIBBS  Oxford University, UK
MARTIN COFFEY  University of Leicester, UK

ABSTRACT: This article reports a study on the effectiveness of university teachers' training involving 22 universities in 8 countries. A training group of teachers and their students were studied at the start of their training and one year later. A control group of new teachers received no training and both they and their students were studied in the same way. Evidence is reported of changes over time relating to three measures: (i) student ratings of their teachers using six scales from the Student Evaluation of Educational Quality questionnaire (SEEQ) and the 'Good Teaching' scale of the Module Experience Questionnaire (MEQ); (ii) the extent to which teachers described themselves as teacher-focused and student-focused in their approach to teaching, using two scales from the Approaches to Teaching Inventory (ATI); and (iii) the extent to which these teachers' students take a surface approach and a deep approach to learning, using two scales from the MEQ. The article reports evidence of a range of positive changes in teachers in the training group, and in their students, and a
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Appendix. The Programme Rationale Questionnaire

Please read the following list of rationales for programmes for new teachers and consider which of them best matches the rationale of your own programme.

You have 12 'points' to allocate so as to indicate the extent to which these rationales represent the rationale of your own programme, spread across as few or as many of these rationales as you wish. Allocate zero (0) if the rationale is not part of your thinking at all.

Please allocate all 12 points (no half points please!) and ensure that the total adds up to 12.

If your programme has a rationale not represented at all here, please add up to two additional rationales and allocate your 12 points to include these two.

<table>
<thead>
<tr>
<th>The course is concerned with ...</th>
<th>Points awarded</th>
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<tbody>
<tr>
<td>1. Skills ... changing teachers' skills and teaching behaviour (for example, improving presentation skills or research supervision skills)</td>
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<tr>
<td>2. Student learning ... improving student learning (for example, so that their students adopt a deep approach to studying)</td>
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<tr>
<td>3. Conceptions ... changing teachers' conceptions of teaching (for example, towards a more student-focused approach)</td>
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<tr>
<td>4. Repertoire ... extending the range of teaching methods a teacher can use (for example, using different methods in different circumstances)</td>
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<tr>
<td>5. Reflection ... developing teachers as reflective practitioners (for example, so as to be able to recognise problems or justify teaching decisions)</td>
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Total = 12
TRAINING TO TEACH IN HIGHER EDUCATION

Correspondence
Professor Graham Gibbs, Centre for Higher Education Practice, The Open University, Walton Hall, Milton Keynes MK7 6AA, United Kingdom (g.p.gibbs@open.ac.uk).

References
are involved in the study, all with programmes for new teachers which involve at least 60 hours of training. The trainee teachers complete the ATI and TMI at the start of their training and administer the SEEQ and MEQ to their students early in their first semester's teaching. The same instruments are then re-administered at the end of the training, between 8 and 18 months later. The pattern of administration varies between programmes to fit in with the varied nature of the training. Questionnaires are processed automatically at the Open University and individual reports generated, summarising scores and their meaning, generated for each trainee, and for each trainer, with comparative scores from other programmes. A control group of four universities that have no training programme is being used to provide a baseline indicating the level of change over time which can be anticipated without training. Trainers are also asked to identify the rationale of their programmes using the questionnaire in the Appendix.

In this way, the intentions of the trainers can be related to the outcomes of their programmes.

Conclusion

Even though training of university teachers in the United Kingdom is now conducted in the context of nationally prescribed outcomes required for accreditation, trainers retain a great deal of autonomy in determining the details of their own programmes of training and, as this research has revealed, even determining the intended outcomes of this training. Trainers differ from each other in their goals, and the priorities for some programmes are diametrically opposed to the priorities of others, particularly with regard to the emphasis given to the acquisition of basic teaching competence or skill. While an emphasis on developing 'reflective practitioners' is dominant overall, this does not exclude a range of other intended outcomes. The 'in house' nature of the training obliges trainers also to consider the organisational context and the politics of their training and its outcomes.

Research tools exist which are capable of measuring the main outcomes trainers identify. These tools are currently being used in a large-scale international comparative study that will be able to identify what training actually achieves. Trainers could use these tools to study which goals they achieve: whether or not their programmes achieve their intended goals, and whether or not they also achieve unintended goals. This could highlight whether their training processes are appropriate to the actual outcomes of their programme and may lead to a reconsideration, in some cases, of which goals for such programmes are realistic.

These tools are accessible for free use via the Training University Teachers Research Network (TUTRN) Web-site (www.open.ac.uk/cehep).
and small-enrolment courses (Lucas et al, 1997). It has a less robust factor structure than the SEEQ (Marsh, 1982).

Conceptions of Teaching

Murray & Macdonald (1997) summarise eight models of 'conceptions of teaching' within one table, showing the many common features of these models. There are clear parallels between models of conceptions of teaching and the features identified by Sprague & Nyquist (1991) and Kugel (1993) in their qualitative studies of development of teachers: in particular, the developmental shift from a focus on the teacher to a focus on the student. A questionnaire, the Approaches to Teaching Inventory (ATI), has been developed which allows the categorisation of teachers' conceptions (as teacher-focused or student-focused) without lengthy interviewing (Trigwell et al, 1994). It has been used in a number of studies that have highlighted the significance of teachers' conceptions for student learning. For example, students taught by teachers with a student-focused approach 'characteristically take a deep approach (rather than a surface approach) to their learning – attempting to make sense of (rather than reproduce) the content of their course (Sheppard & Gilbert, 1991).

Repertoire of Teaching Methods

In the study reported here, a number of trainers argued that they want teachers to be able to respond flexibly to different situations and select appropriate methods to suit different contexts. It is difficult to measure reflectiveness directly. However, it could be argued that teachers' repertoire is not simply an indication of their skill but of their reflection, in that if a teacher can notice differences between contexts, or can diagnose problems, then they will also use a wider repertoire of methods to respond to these problems or contexts. Someone who uses a range of methods is likely to be more reflective than someone who does not. The authors have developed an inventory (the Teaching Methods Inventory, TMI) as a measure of repertoire. The TMI asks teachers to list variations on the two most common teaching methods they use and to explain their choice of some of the repertoire of methods they list.

Together, these four instruments are capable of providing a measure of four of the most prominent goals trainers seek to achieve: change in classroom behaviour, change in their students' learning, change in conception of teaching and change in repertoire of teaching methods.

A Research Study into the Impact of Training

The authors are currently engaged in a collaborative international research project to study the impact of training of university teachers using the four instruments described in this article. Twenty-three universities in 10 countries
incidents while issues of skills or reflection were more likely to be emphasised in answers about intentions.

How Can Change and Development be Conceptualised and Measured?

If the foregoing summary represents a useful summary of trainers’ intentions, how could the realisation of these intentions be measured? The literature offers a number of useful frameworks for conceptualising the different goals trainers described to us and there are also accompanying tools for measuring the achievement of some of these goals.

Teaching Skills

The dominant model of instructional development in higher education in the USA is behavioural. The most common instruments used to measure change in teachers are student feedback questionnaires, which focus on teachers’ classroom behaviour, often ‘low inference’ behaviours which students can judge reasonably reliably. These questionnaires are usually developed through repeated factor analysis and development of scales and items on the basis of their statistical characteristics, rather than on the basis of conceptual analysis or theories of learning. The best of these questionnaires can reliably distinguish teachers, and can identify changes over time in teachers, using scales whose scores correlate with various measures of learning outcomes. Training can be oriented specifically to improve scores on these scales and may involve modelling of skills, microteaching, observation using skill checklists, and practice. We have adopted the Student Evaluation of Educational Quality (SEEQ) questionnaire (Marsh, 1982) for use, because it is short, and it has high reliability and adequate validity.

Student Learning

Differences in student learning are most commonly conceptualised either in terms of style (e.g. experiential learning style [Kolb, 1984]) or approach (e.g. Marton & Säljö, 1998). As students’ approach to learning is heavily context-dependent, it provides an appropriate way of looking at the effects of teaching on learning. The Module Experience Questionnaire (MEQ) is a modified version of the Course Experience Questionnaire (CEQ) (Ramsden, 1991), which includes scales measuring the extent to which students are taking a ‘deep’ or ‘surface’ approach to their learning as well as scales which measure features of course design known to relate to approach, such as workload, scope for independence and appropriateness of assessment. The CEQ is used very extensively in Australia. Modified as the MEQ, it has been used successfully in the United Kingdom to distinguish student learning on large-
I did interview staff who had completed the course ... asking them about what impact they thought the course had on them and how they had been able to operate as innovators within their department ... in terms of their impact on their departments ... where the individual appears as a leader of a team directing a new course or something.

The things that seem to me to be important are when I hear of course participants taking part in innovations of some sort ... when I hear of participants being used as consultants in some way by their department. So those are both clear indications that the course is having some impact ... being seen as a source of expertise within their group.

People getting involved in teaching and learning in their own school seems to us to be pretty important. If I had to choose one thing it would be 'what are they doing in their own school as a result and what continuing ... development are they getting involved with?'

A key issue is that departments and schools within the university should feel that having had staff on the programme, things have improved within their teaching area ... it's helping things for the whole department.

Educational development activity within universities is usually a precarious business. It may take years to get approval to set up a training course but a little adverse publicity or a change in the attitude of senior management can result in the closure of training programmes or even the entire unit that provides the training. For some trainers, retaining the support of heads of department was amongst the most important outcomes of the programme. In response to a question about an incident that indicated a positive impact of the training, one trainer reported:

We did ... receive a letter from a supervisor in an engineering department and it seemed particularly nice because it was basically saying that the department was very grateful for the work that had been put in to one of their junior staff who had come on the Certificate course ... why was it important? ... recognition of the role of the academic quality enhancement unit that provides the course.

Overview of Trainers' Intentions

The most striking thing about trainers' intentions was their sheer variety, which was evident both between programmes and within programmes. While there were differences in emphasis, most programmes could be described as eclectic, with multiple intentions and multiple methods.

The 'critical incident' questions were very revealing, and elicited views of what really mattered, which did not always correspond with what had been argued were the main goals of the course. In particular, goals concerned with organisational change and political support were emphasised in the critical
Not only would they have been involved in reflective practice through the programme but that would be part of their everyday way of working ... in the future therefore they will want to continue thinking about their practice.

Hybrids and Flexibility

As highlighted at the outset, every trainer had multiple goals and multiple rationales, though one goal was often dominant. The multiple goals were sometimes interwoven even though they could have different implications for training methods or assessment of outcomes. Sometimes it was considered up to the trainees what they got out of the programme.

Some people go very much for a skills focus and some concentrate on their conception and understanding of the theoretical underpinning of what they are doing. People take different things from it and we kind of let them do that rather than push one or the other.

Training in Its Organisational Context

Unlike schoolteacher training, almost all training of higher education teachers takes place within the organisation that both the trainers and the trainees are employed by. The trainers are subject to organisational pressures and policies, including the possibility of sudden changes in funding or even closure of their training unit. Inevitably, this has an impact on trainers' priorities and on their goals.

Some trainers talked about training not in terms of its effects on individual teachers but in terms of their effects on teachers' colleagues in their departments and on departmental practices in general. The institution's investment in training may have been part of a strategic attempt to improve teaching across the institution, rather than simply to bring new teachers up to an acceptable standard. Those who had completed training were sometimes perceived as 'plants', who would subsequently bring about innovation more widely. This could be seen as a long-term goal involving the cumulative effect of many teachers having been trained.

I think that it is really important when you find people 2 or 3 years after they have finished the course leading things in their departments, leading teaching and learning initiatives.

The point of the course is very much integrated into the university rather than a free-standing course because the idea is that you get a critical mass of lecturers who have been through the course and share values ... and then they will begin to make a difference. It is actually quite hard for individual lecturers in a tough faculty to make a difference.
redressing this balance by ascribing value to teaching and establishing positive attitudes.

I want them to leave the course enthusiastic about teaching and willing to go on thinking about it.

The participants themselves feel that ... they have got a positive view about teaching and learning ... quite a lot of the assignments that we set are developmental tasks, so if they feel that they have succeeded with them they should have made progress.

The attitudes of staff sort of a year or two on ... they may be willing to come and assist with the course ... or they might be happy to mentor somebody ... that implies an enduring sense of the value of the course.

Some courses were designed to create their own 'community of teaching practice', with its own set of values, which contrasted with the values of the departments from which trainees were drawn.

Developing Confidence to Teach and to Innovate

Trainers described the importance of confidence as related to trainees' willingness to try things out, in that if they lacked confidence they would stay with traditional approaches or with whatever methods their colleagues used.

People feel more confident in themselves as a teacher ... at the end of the course I want people to feel that they are much more confident about using a range of techniques and approaches ... more confident that they can use them effectively.

There was no evidence of trainers theorising what 'confidence' meant or how it could be inculcated, for example, with reference to the concept of self-efficacy (Soodak & Podell, 1996).

Launching Teachers on a Trajectory of Continuing Professional Development

Training was sometimes seen not as an end in itself but as the establishment of a career-long pattern of self-improvement, whether or not this had anything to do with reflective practice. What was important was whether teachers carried on improving, rather than what, specifically, they had got better at while on the programme.

I see that as the starting point for further development so there wouldn't be something that had a beginning and end point in a certain 6 months of their work, but that would be ongoing.

I am trying to achieve the first step in an ongoing process ... people who are motivated to go on developing.
Moving Teachers from a Teaching-centred to a Learning-centred Conception of Teaching

While no trainers explicitly mentioned literature on conceptions of teaching, a number explained their intentions in terms of wanting to change teachers’ conceptions, and in a way congruent with the distinction Trigwell et al (1994) make between a teacher-focused conception and a student-focused conception of teaching (see later). This was also seen in a developmental way, mirroring Sprague & Nyquist’s (1991) description of developmental stages involving a shift from a focus on the content, to a focus on the process in terms of teacher behaviour, and finally to a focus on learning outcomes and teaching effectiveness in terms of student learning.

Changing and developing teachers’ practice for us depends on changing and developing conceptions of teaching and learning, and their perceptions of knowledge and learning. We see these as necessary conditions for change.

I can think of an instance where I was observing somebody ... and this ... member of staff said to me, ‘When I first came on the programme, all I could think about was me and how I was performing. What this programme has made me think about is, are students learning?’ ... We provide a programme, we do it to the best of our ability, but somehow they have got to make that transition themselves.

The ultimate purpose is to improve the learning experience of students.

There is an overriding assumption that the whole thing is about improving student learning.

This emphasis was also highlighted when trainers described failures in their programmes.

Why I felt dismayed about the two [lecturers] is that I don’t pick up any sense of whether they really care about whether the students learn or not, they don’t ask themselves those questions.

When I felt most dismayed in the whole of the course last year was in a session on personal tutoring ... I think there was a pretty serious failure to appreciate the crucial impact of a personal situation on students ... It said something about the whole tenor of the programme.

Orienting Teachers to Value and Pay Attention to Teaching

In a higher education culture that often values research over teaching, or even denigrates teaching, some trainers saw programmes as having a role in
as a matter of habit and part and parcel of the way they go about developing themselves.

Professional development was also expressed in terms of reflective practice enabling teachers to break away from conventions.

They are able to bring some breadth ... so that they are not simply repeating what they, themselves, experienced.

This is in marked contrast to much training in the USA, which is designed to enable Teaching Assistants (TAs) to implement a model of teaching designed by the senior academics whose course they teach on and who supervise them. In the period during which they are trained, most TAs do not have the scope to design their own course or assessment. In contrast, many of the teachers on programmes in the United Kingdom have considerable responsibility for design decisions, and scope to change things, from an early stage, and many programmes encourage these teachers to use this scope to the full.

Appreciating the Complexity of Teaching and Developing a Language and Form of Discourse to Discuss and Analyse It

In his phenomenographic study of learners' conceptions of learning, Saljö (1979) encountered students who could not 'thematis' learning: they were unable to discuss it and had no language with which to describe what was going on. Similarly, Sprague & Nyquist (1991) have described TAs who, even after some experience of teaching and some training, seemed unable to talk about it or to be able to comment on why one teaching situation might work better than another. Several trainers identified this issue as a key focus of attention in changing teachers. They wanted to develop in teachers the ability to talk about, think about and describe their own practice so that they could engage in critical dialogue about teaching. This was seen to involve the acquisition of terminology, a new language and a new form of discourse - a discourse which was largely missing from their own academic departments. This intention was sometimes expressed more narrowly in terms of familiarity with literature and theory about teaching and learning.

People who haven't done the programme find it incredibly difficult to deconstruct a teaching session and to ... talk about it and to learn from it. I think even well-intentioned and earnest people don't have the language and the understanding of what makes up a teaching session ... what the programme actually does is help people to deconstruct what is going on, to unpick it, to give it labels, to unpack it in order to talk about what's good and what's bad and what do we need to do about it and what are we trying to do here ... it is [about] articulation and discourse.

What this programme is seeking to do is to help participants to identify and analyse and articulate their practice and their perceptions so that by doing that
In contrast, some trainers, in emphasising the goals of their training, made a point of highlighting that skills or competence were not the primary concern, sometimes contrasting skills with reflection.

It is not designed to achieve a particular threshold of competence in the classroom.

I think for the most part I want them to reflect on what they are doing rather than it being a skill-based thing.

It is possible, in fact, to do some really rather bad teaching and be observed but none the less to be seen to be reflecting on it and to take action to improve it and to pass the course.

The people coming on the course ... would learn by talking about what they did ... there isn't a lot in it on, if you like, direct skills training.

The programme is much more to do with that kind of intellectual challenge than it is to do with training people with particular skills.

This distinction sometimes involved the difference between training that was aimed at very new teachers and more advanced programmes that were open to experienced teachers, or to teachers new to higher education but who were in mid-career, with much industrial or professional experience and who already had a repertoire of skills.

Schön's (1987) model of the reflective practitioner was the dominant (usually implicit) theoretical model evident in trainers' accounts. Almost all trainers mentioned the role of reflection in learning to be a teacher, and in continuing to develop and to be effective as a teacher, and for many, this was paramount.

We would want to achieve a sort of guided reflection on other people's practice and indeed on their own practice ... so they are looking at what happens when they use particular methods, or try particular approaches themselves.

I'd like to think that when staff have finished our programme that they would not only have been involved in reflective practice through the programme, but that would be part of their everyday way of working ... that would ... form part of their regular way of thinking.

We want them to become reflective practitioners.

This intention was also expressed in terms of being flexible in ways that will improve their teaching.

It is designed to equip them with the tools to enable them to be more effective, more versatile, more experimental ... and to encourage them to adopt an action learning approach to their teaching ... and deliberately using the experiential learning cycle...
The interviews were fully transcribed and marked up where statements referred to the intentions of trainers and their programmes. Categories were then developed which accounted for the variety of statements in the most parsimonious way. After several reiterations, a set of categories was agreed between two judges (the authors) and defined. The transcripts were then reanalysed to check that no other categories were required to account for the variation. No quantitative analysis of the frequency of use of categories was undertaken. These categories are explained and illustrated with extracts from the transcripts.

It was not the case that any entire transcript could be categorised as illustrating any single overall intention or goal. Rather, every trainer described multiple goals. Sometimes a single sentence in a transcript could be categorised in relation to three or four goals. The extracts used as illustrations are therefore best seen as illustrations of how trainers explained that particular intention, rather than as examples of trainers who had that, and only that, intention.

Training to Develop Skills and Competence

Some trainers emphasised the importance of basic classroom teaching skills, especially for those teachers who did not yet have responsibility for course design and improvement and who did not yet perform other academic roles. It was assumed that teachers' classroom behaviour and skill was crucial. Training programmes were described as being designed to meet trainees' immediate needs to get a job done competently.

The basic rationale of the course ... is to provide some training which will help staff to acquire competence they will need to carry out the job they are asked to do.

The main thing was improving people's skills and teaching behaviour.

It was designed to be of immediate use to staff.

So it is intended to give people skills ... the main thing was improving people's skills and teaching behaviour.

We are saying to all staff that there are levels of competence which we expect staff to achieve.

It is designed to support new staff as they begin to teach ... at least we would hope that they acquire skills.
Certificate. It quickly became apparent that the goals of training varied widely between courses and were complex and multifaceted within courses. This was something of a surprise because most of the courses were accredited by the Staff and Educational Development Association (SEDA). SEDA specifies the learning outcomes a programme should achieve and requires that courses have mechanisms to assess these outcomes. The trainers were all aware of the establishment of the Institute for Learning and Teaching and the impending professionalisation of higher education teaching within a single framework of standards, again specified in terms of learning outcomes. As a consequence, we had assumed that this would have had a normalising effect on courses. We had expected to find varied training processes to achieve much the same goals and instead discovered very varied goals. The first section of this article summarises an interview and questionnaire study to explore these different goals in more depth.

There is very little evidence that training university teachers makes any difference. Reviews of the literature carried out over two decades have highlighted the weak conceptual underpinnings of the limited empirical evidence that exists (Carroll, 1981; Abbott et al, 1989; Weimer & Lenze, 1997). The second section of this article identifies four instruments which have a conceptual basis and which could be used to identify the outcomes of different kinds of training, and the final section outlines an international research study which uses these instruments to identify the extent to which different training programmes achieve their different goals.

Trainers' Intentions

Training programmes at 11 institutions in the United Kingdom were involved in a longitudinal study of the impact of their training. At the end of the first year of this research, the trainer responsible for each programme was interviewed and completed a short questionnaire. The interview was conducted by telephone and involved the following questions:

- What is the rationale of your programme for teachers?
- Why did you choose the programme design and training methods you have?
- What is your programme designed to achieve?
- What are the most important outcomes of your programme?
- What kinds of outcome of your programme are most important to you?

This was followed by a brief critical incident analysis involving two questions:

- Tell me about a time when you were delighted to find that your programme had some kind of impact. What was that impact and why was it important?
- Tell me about a time when you were dismayed about the impact, or lack of impact, of your programme on a teacher. Why was this failure important to you?
Training to Teach in Higher Education: a research agenda

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The Open University, Milton Keynes, United Kingdom

ABSTRACT Unlike schoolteacher training, there has, until recently, been no agreed set of outcomes for initial training for higher education teachers in the United Kingdom. The voluntary but widely adopted Staff and Educational Development Association (SEDA) Accreditation Scheme has provided a common set of outcomes and in 1999 the Institute for Learning and Teaching announced its standards for professional accreditation.

Research reported here suggests that trainers have widely divergent views about what their training is attempting to achieve, even where they operate within a common accreditation framework. They also have multiple goals within the same programme. Trainers’ views about outcomes are mapped on to available conceptual frameworks about what developing as a higher education teacher involves. Measures of many of these outcomes are readily available but rarely used. A research programme to evaluate the actual outcomes of training in higher education is outlined.

Introduction

Comparative studies of training of university teachers (Gibbs, 1998) have highlighted the different goals of different kinds of programmes. In the USA, there is often an emphasis on fine-tuning of well-defined behavioural classroom skills (such as how to ask open questions) whereas in the United Kingdom, the 'reflective practitioner' model is often dominant. As a consequence, there is less micro-teaching or behavioural modelling going on in the United Kingdom but a good deal of writing of reflective logs and talking about teaching. Where classroom observation is used, the emphasis is often on the quality of peer critique, rather than on checklists of skills. A component of a wider research programme, reported here, involved convening meetings of trainers in the United Kingdom and discussing what they were hoping to achieve - what values and beliefs lay behind their course documentation which had been written to obtain course approval as a Postgraduate
Table 12.4 The Training Effectiveness Toolkit (the toolkit contains two questionnaires)

**Questionnaire for teachers' students**

1. Classroom teaching (c. 10 items) (two items from each of five key scales taken from the SEEQ)
2. Surface approach (c. 6 items) (from the MEQ)
3. Deep approach (c. 6 items) (from the MEQ)

Total: 22 items

**Questionnaire for teachers**

4. Teacher-focused approach (c. 8 items) (from the ATI)
5. Student-focused approach (c. 8 items) (from the ATI)
6. Reflection (c. 8 items) (new items)
7. Teacher efficacy (c. 8 items) (derived from Gibson and Dembo 1984)
8. Repertoire (c. 8 items) (new items)

Total: 40 items

Conclusions

This chapter has argued for a more scholarly and rigorous approach to evaluating the impact of training of university teachers. It has reviewed some of the existing evidence, and the limitations of this evidence and the methodologies which produced it. It has attempted to show how use of theoretical frameworks and empirical evidence can inform training decisions and help to diagnose training problems. Finally it has reported on the development of two questionnaires developed specifically for the purpose of evaluating the impact of training, based on existing theoretical frameworks and existing research tools.

If trainers were to collaborate in using these questionnaires, and to pool the evidence from this research, we would have a substantial basis from which to influence policy on training, both within our institutions and at a national level.
Table 12.3 Goals of training, their focus and associated measures of outcome

<table>
<thead>
<tr>
<th>Goals</th>
<th>Focus</th>
<th>Associated measure of outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioural change</td>
<td>Classroom teaching behaviour and the improvement of skills.</td>
<td>The Student Evaluation of Educational Quality (SEEQ) (Marsh 1982, Coffey and Gibbs 2000b) which measures low inference classroom behaviours.</td>
</tr>
<tr>
<td>Conception of teaching</td>
<td>Movement from a preoccupation with content to a focus on learning.</td>
<td>The Approaches to Teaching Inventory (ATI) (Trigwell and Prosser 1996) which measures the extent to which a teacher is teacher-focused or student focused (in both intention and strategy).</td>
</tr>
<tr>
<td>Reflective practice</td>
<td>Ability to reflect on practice.</td>
<td>The Teaching Methods Inventory (TMI) (Coffey and Gibbs, under review) which measures teaching repertoire and reflection.</td>
</tr>
<tr>
<td>Improving student learning</td>
<td>How students approach learning.</td>
<td>The Module Experience Questionnaire (MEQ, based on the CEQ) (Ramsden 1991) which measures students' approach to learning and response to features of course design.</td>
</tr>
<tr>
<td>Development of self-confidence</td>
<td>'Teacher efficacy' and confidence in their ability to teach effectively and to use new methods.</td>
<td>The 'Teacher Efficacy' questionnaire (Gibson and Dembo 1984).</td>
</tr>
</tbody>
</table>

Table 12.3 summarizes the main goals of training identified by UK trainers (Coffey and Gibbs, under review) and the research tools currently available to measure the impact of training on the achievement of these goals.

The Centre for Higher Education Practice has been undertaking an international study since 1997 in which the SEEQ, MEQ, ATI and TMI have been used in a total of 24 institutions in eight countries, at the start and end of training programmes, in an attempt to identify the relative impact of training programmes of various kinds. The institutions studied include four where no training is undertaken, in order to separate the effects of experience from the effects of training. The trainer responsible for each programme has also completed a 'Training Rationale Questionnaire' in order to be able to see if training with different goals has different impacts. Preliminary evidence from 10 programmes includes a positive impact of training on five of the six scales of the SEEQ after only three months of training (Coffey and Gibbs 2000a).

While the four instruments used provided valuable data, there were a number of problems:

- They were too long and time consuming to complete. Both teachers and their students were asked to complete two instruments on two occasions and this substantially reduced return rates. Making the student questionnaires shorter is particularly important as about 20 students are required to complete this questionnaire for each trainee teacher.
- They each involved a different layout, structure and rating scales, making it difficult to understand how they should be completed and this introduced errors in responses.
- Statistical analysis showed that a much smaller number of items was required to obtain reliable scores for each measure and that some subscales were unnecessary.
- The TMI did not work sufficiently well to measure teachers' repertoire and failed to distinguish teachers in terms of the level of their reflectiveness.

By 2002 work was completed to develop two new short instruments to replace the four used previously, and to do this in a way which made them easy to use and score by trainers without access to specialist research or statistical support, Table 12.4 lists the scales the instrument contains.

If these questionnaires are administered to teachers, and to their students, at the start of training and a year later, after it is complete, scale scores may be able to be used in the following ways:

- Scores on Scale 1 can indicate the extent to which training changes classroom teaching practice, as perceived by students.
- Scores on Scales 2 and 3 can indicate the extent to which training changes the way teachers' students approach their studying.
- Scales 4 and 5 can indicate the extent to which training changes teachers' approach from a teacher focus to a student focus.
- Scales 6, 7 and 8 can indicate the extent to which training changes teachers' reflection, repertoire and self-efficacy, respectively.

With these two questionnaires trainers should be able to identify any impact of their programme and the nature of that impact, in relation to their training goals and methods. The Centre for Higher Education Practice at the Open University have made the Training Effectiveness Toolkit available for free use, together with instructions for its administration and scoring. Where possible, data and norms from the use of these questionnaires will also be made available so that trainers can compare their teachers' scores, and the impact of their training programme, with those of others in their own or other countries.
In the example discussed here a particular rationale for a programme has a theoretical framework, an empirical basis and empirical evidence of impact based on the use of a purpose-designed research tool (the ATI), using properly designed studies (including a control group).

Using research to make sense of problems

Research can be used to understand what is going on when training does not work as well as it might. For example, Isaacs and Parker (1996) ran an initial training programme for new teachers at the University of Queensland which was oriented towards improving student learning outcomes and reflective practice. It operated in an intensive block right at the start of the academic year. Evaluation showed that the participants did not like it at all and would have preferred an emphasis on getting the basic skills right, such as lecturing.

To help us make sense of what was probably going on here there is a growing literature about the nature of the changes that take place as teachers in higher education develop over time, especially at the start of their careers. Two models of development, in particular, provide helpful clues for researchers about what to look for in tracking the development of teachers over the course of an initial training programme.

The best researched scheme (Nyquist and Wulff 1996) was derived from qualitative research at a number of US universities and colleges, and informed by models developed in the context of school teaching. It plots a developmental shift of teachers’ focus of attention from self to skills and then to students. A second scheme (Kugel 1993) which has come out of work at Harvard University and Boston College, describes the first stage as involving a focus on the self: whether one is liked or seen as competent. Kugel defines an additional stage in which the focus is on the subject – characterized by over-preparation and overfilling lectures out of anxiety about being on top of the material. Kugel then describes a focus on the student which develops in three stages: from a focus on the student as passively receptive, to being active, and finally being independent. Kugel also emphasizes key transitions which take place and these transitions are identified in Table 12.2 which integrates the Nyquist and Kugel schemes.

The first transition described is from a focus on the content of what teachers teach to a focus on how to teach it. The implication is that it may be difficult to get new teachers to pay much attention to methods until they feel reasonably secure in their knowledge of their subject. The second transition described is from a focus on teaching to a focus on learning. This is a transition many teachers never make and it is difficult putting models of reflective practice into operation if teachers pay no attention to learning outcomes and to what students do as a consequence of their teaching. Recent longitudinal work, following new teachers over an extended period (Nyquist and Wulff 1998) has identified a lack of reflection, or indeed any ability to ‘thematize’ teaching, as accompanying failure to develop.

Recent longitudinal work, following new teachers over an extended period (Nyquist and Wulff 1998) has identified a lack of reflection, or indeed any ability to ‘thematize’ teaching, as accompanying failure to develop.

<table>
<thead>
<tr>
<th>Stage 1: Focus on self, including own knowledge of subject</th>
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<tbody>
<tr>
<td>Transition from focus on content to focus of process</td>
</tr>
<tr>
<td>Stage 2: Focus on methods: how should I teach?</td>
</tr>
<tr>
<td>Transition from focus on teaching to focus on learning</td>
</tr>
<tr>
<td>Stage 3: Focus on outcomes: what have students learnt? Am I effective?</td>
</tr>
</tbody>
</table>

The problem the University of Queensland programme experienced was probably associated with the teachers being at too early a stage in their development to be able to focus on students and learning outcomes and hence the focus of the training programme passed them by. Theoretical frameworks, and the empirical evidence which accompanies them can provide insights and explanations to help evaluate training programmes and to interpret evaluation evidence.

Research tools

At the SEDA Staff Development conference in Manchester in 1997 a medical school reported in a workshop how they had developed a new tool for evaluating interactive teaching sessions through observation. Their observation schedule was based on an informal survey of what items teachers and management in the school would like to see included in it. In the seminar participants were asked to use the observation schedule as they watched a video tape of some small group teaching. It proved impossible. There was no agreement about what the observation categories meant or whether particular things had been observed or not. The observation schedule had not been developed in a way that could possibly make it reliable or valid.

There is a substantial literature on what aspects of teaching can be reliably judged, emphasizing the importance of focusing on ‘low-inference’ teaching behaviours where the observer is having to make as few subjective judgements as possible so that observers watching the same thing find it easy to agree that a teaching behaviour has happened (see Murray 1983). Well-developed observation schedules already exist, accompanied by evidence of high levels of inter-observer reliability as well as evidence of validity in that what can be observed relates to important student learning outcomes. Why do we try to invent our own tools and devise our own evaluation questionnaires when there are well-developed research tools already available?
feedback on teaching behaviour (Dalgaard 1982) and the effects of use of student feedback questionnaires (Marsh 1987). But how many programmes' choice of methods is informed by this research evidence? For example, most programmes in the UK probably encourage teachers to collect student feedback. However, few training courses encourage the use of feedback questionnaires that have established reliability or validity, such as the Student Evaluation of Educational Quality (SEEQ) which has been validated for use in the UK (Coffey and Gibbs 2000b). The evidence is clear that mid-term use of such feedback questionnaires, and consultation with an educational expert about the results, greatly increases the likelihood that the use of such feedback questionnaires will improve teaching (Marsh 1987).

But how many programmes use this evidence and arrange for teachers to use questionnaires half way through courses (rather than only at the end of courses) and how many undertake a consultation with teachers about their student feedback? The University of Lincoln in New Zealand took this research seriously and required teachers to visit the educational development centre and have a chat about their student feedback. This was the only way to obtain the feedback and it encouraged most teachers to seek this consultation.

Consultation is shown to have long-term positive effects on student ratings, especially if this consultation is accompanied by observation or meetings with students (Piccinin et al. 1999). How many training programmes use either observation or consultation backed up by meetings with the trainee teachers' students?

Finally, there are studies which report on the effectiveness of training programmes with very specific goals. For example, Schreurs (1998) reports how a training programme was developed for tutors in a problem-based medical course. Very specific tutor behaviours which were considered desirable in problem-based tutorials were identified and a highly structured series of intensive workshops were designed to train tutors to use exactly these behaviours. Every teacher new to the institution, no matter how experienced or senior, was obliged to undergo this training, so it was important to be able to check that such a policy was justified. They used video as part of the training and also to evaluate whether the tutors had adopted the desired behaviours. It is not common for training programmes to have such specific goals that they can evaluate their success in this way. However, it is unclear what can be generalized from such studies other than that such behavioural change is possible.

Using research to develop and implement rationales for programme design

As reported above, trainers have many different rationales for the design of their courses. One such rationale will be explored in detail here to illustrate the potential of research to conceptualize the issues, provide assistance in programme design, and provide research tools with which to evaluate the impact of training.

Some training programmes attempt to re-orient teachers from a teacher-centred approach to a student-centred approach. For example one trainer reported:

I can think of an instance where I was observing somebody... and this... member of staff said to me 'when I first came on the programme, all I could think about was me and how I was performing. What this programme has made me think about is 'are students learning?'... we provide a programme, we do it to the best of our ability, but somehow they have got to make that transition themselves.

This difference in focus has been studied in-Australian universities (e.g. Trigwell et al. 1994). Teachers have been interviewed about their approach to teaching, just as Marton interviewed students about their approach to learning (Marton et al. 1993). A questionnaire has been developed (the ATI: Approaches to Teaching Inventory) which identifies the extent to which teachers are teacher-focused or student-focused. Other studies have shown that teachers who are teacher-focused are more likely to have students who take a surface approach to their studies (Trigwell et al. 1999) and we know that students who take a surface approach understand less and forget more quickly. Teacher-focused teachers also have a narrower repertoire of teaching techniques while teachers with a student focus score better on a student feedback questionnaire (the SEEQ) (Coffey and Gibbs, under review). So we know that changing teachers' approach is an important goal for training. But can such approaches be changed by training?

Ho (1998a) has reviewed the literature on conceptual change as it applies to professional contexts, and to changes in conceptions of teaching in particular. She designed and implemented a programme for new higher education teachers consisting of ten activities, designed according to these principles. Using depth interviews, before and after the course, and analyzing transcripts using the Trigwell and Prosser categories of approaches to teaching, she has demonstrated changes in teachers' conceptions between the start and end of the programme (Ho 1998b). These changes also translate into teachers' action and impact on student learning.

Changes in teachers' approach from the start to the end of training programmes have also been reported, using the ATI to measure teachers' approach (Coffey and Gibbs, under review). ATI scores were found to correlate with student feedback ratings using the SEEQ, with the approach students took to their studies and to the repertoire of teaching methods the teacher used. The findings demonstrated that variable changes in approach to teaching are clearly possible. Training programmes, in 20 institutions in eight countries, have been found to move teachers to a more student-focused approach and a less teacher-focused approach, while a control group, who experienced no training, moved in the opposite direction (Gibbs and Coffey 2001).
included the improvement of student feedback ratings. The feedback ratings were from a locally designed questionnaire that had not been tested for its reliability or validity and which had no underlying theoretical model of what good teaching consists of. These are fairly substantial methodological problems.

Giertz (1996) has reported a follow-up study of the impact of a training programme at the University of Uppsala. The study used depth interviews and teachers were given the freedom to define for themselves what kinds of changes they believed had taken place. The report makes interesting reading and the quotes from teachers would encourage any trainer. However there is no corroborating evidence of these self reports of any kind – from student feedback, from student performance, from observation, or from colleagues. There was no ‘before’ measure. Several studies (e.g. Murray and Macdonald 1997) have highlighted the difference between teachers’ accounts or intentions and what they actually practise in their teaching. In the Approaches to Teaching Inventory (ATI) there are separate questionnaire items for teachers’ intentions and for their strategies (Trigwell and Prosser 1996a). This difference, between what Schon has called ‘theories of action’ (e.g. post hoc explanations a teacher might give for why they teach in the way they do) and ‘theories in use’ (e.g. the teacher’s implicit model which must be driving their observable teaching behaviour) bedevils research into professional practice which relies on self-report without triangulation with evidence from other sources.

These studies are amongst the few which provide any evidence that initial training makes any difference. Understanding their methodological difficulties, however, helps to illuminate what kind of studies are required if we are to place more confidence in our evidence.

The selection of training methods

As well as there being a lack of evidence of the overall impact of training there is also a lack of evidence about the efficacy of the most common training methods we choose to adopt in our programmes. For example, American reviews of the literature on faculty development (such as Weimer and Lenze 1997) have been uniformly scathing about the reliance of faculty developers on the use of workshops as a change process, in the absence of evidence of their effectiveness. The usual criticism is that there is little ‘transfer of training’ from the workshop to the classroom. Studies of the impact of ‘microteaching’ have highlighted this problem: behavioural change induced under workshop conditions may not be reproduced in the classroom. Academic development in the UK relies on workshops almost as much as do those in the USA. Should we be using workshops at all?

In the UK, Chris Rust is responsible for a national programme of workshops which have been running for more than a decade under the auspices of the Oxford Centre for Staff and Learning Development (OCSLD). In the face of criticism of the potential usefulness of these workshops he undertook research into the impact of OCSLD’s activities (Rust 1999). In addition to end-of-workshop feedback on a large number of workshops, using a feedback questionnaire of a kind which many trainers would recognize, he followed up participants some months later with questionnaires and telephone interviews. He found that:

- Participants often report having made changes to their teaching after having attended workshops.
- Ratings at the end of the workshop predicted outcomes at a later date, in that participants who attended workshops which received better ratings were more likely to subsequently report having made changes to their teaching.
- What are often termed ‘happiness ratings’ may indeed have some usefulness, though some of these ratings had less predictive ability than others.
- ‘Intention to change’ ratings, in the end-of-workshop feedback questionnaire, predicted outcomes reasonably well, in that if a participant said at the end of a workshop that they were likely to introduce some changes, then they were likely to report having actually introduced change at a later date. To some extent we can trust such end-of-workshop intentions.
- Some features of workshops predicted impact more than others, and this data can help us to pay attention to the influential features as we design and run our training. For example, the extent to which plenty of practical ideas were discussed in the workshops predicted impact better than the extent to which the workshop presenter was considered knowledgeable in the topic.

There are problems with this kind of evidence in that:

- Those who attended the workshops were largely self-selected, as were those who replied to questionnaires.
- All change was self-reported change, with no independent corroborated evidence.
- There is no independent evidence that the changes produced beneficial effects, for example from student feedback data or from student performance data. It is perfectly possible that these workshops fostered innovation that had no useful impact or even that it was harmful.
- There is no way of knowing whether these teachers would have brought about these changes anyway. Certainly some feedback from participants reported the workshops to have confirmed them in their beliefs and practices rather than actually introduced them to new ideas.

We can be slightly more confident in using workshops and slightly better informed about what to pay attention to in designing, running and evaluating our workshops, as a consequence of Rust’s research. However, this is not the same as having hard evidence that workshops are a suitable method for trainers to adopt.

There is also evidence available about the effects of use of some other components of our programmes such as programmes based on videos of good teaching.
practice may turn out to be vulnerable. The Institute for Learning and Teaching, for example, has made the policy decision that to be accredited by the ILT an initial training programme has to be at least at the level of a postgraduate certificate course (carrying 60 M-level credit points). This is in excess of the scale and level of many previously existing programmes and imposes on all such programmes the need to undertake a very formal assessment of each teacher. This policy will cost many institutions substantial additional sums, every year, to implement and the employment implications for individual teachers of failing such a formal course have yet to be fully realized. There is currently no evidence available about the relative impact of short or long training programmes which could justify this policy decision. It might have been sensible, but we have no research programme in place at institutional or national level to find out.

It is argued here that it would be to the advantage of educational developers to:

• use research evidence to select training methods;
• use models of the development of teachers and conceptual frameworks to select aims for programmes;
• exploit insights available in the literature so as to understand better some of the phenomena and problems encountered during the operation of programmes;
• use research tools and methodologies when we evaluate our programmes;
• obtain evidence of the overall impact of our programmes on the quality of teaching and learning so as to justify our practice and defend the investments our institutions make in our programmes.

What is training attempting to achieve?

Before attempting to answer a question such as ‘does training work?’ one has to be clear about what kind of outcomes might be achieved and what trainers say they are trying to achieve: what working might consist of. Interviews with trainers about what they are trying to achieve have revealed a wide range of goals (Coffey and Gibbs 2001). A questionnaire study has attempted to quantify trainers’ priorities amongst these goals. The questionnaire listed five of the most common goals identified in the interview study and asked trainers to allocate 12 points amongst these goals in a way which indicated their relative importance on their training programme. By way of illustration, Table 12.1 shows the way two different trainers, both from UK institutions, allocated these points.

Table 12.1 Variations between trainers

<table>
<thead>
<tr>
<th>The course is concerned with . . .</th>
<th>Trainer A</th>
<th>Trainer B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflection</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Student learning</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Repertoire</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Conceptions</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Skills</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>

Does training work?

We often believe our training works and can probably think of individual teachers who we are convinced made great strides while on our programmes. We may have atheoretical evaluation evidence, from home-made questionnaires or informal interviews, that show a reasonable level of satisfaction, on the part of those we have trained, with our programmes. Some of this evaluation evidence has been written up and published. Rust (1999), for example, has reported a range of evidence based on self-reports from teachers who have been through a programme at Oxford Brookes University. But this kind of evidence may not be sufficient to convince those who form training policy or make resource decisions. The Rust study, for example, reports no independent evidence employing any measure of teaching effectiveness, and no evidence from students.

A recent issue of the journal Teaching in Higher Education contained several articles which argued that the whole enterprise of training and staff development for university teachers was inherently incapable of achieving anything useful. These articles contained not a single scrap of evidence but nevertheless posed a real challenge to trainers. There are few studies of the overall effectiveness of attempts to improve new teachers in higher education. Two examples are given here that highlight some of the methodological problems associated with them.

In Australia, Nasr et al. (1996) compared the student feedback ratings of teachers at their institution who had completed postgraduate programmes for teachers (programmes at their or any other institution) with those who had not. They found that trained teachers received significantly higher ratings. While this is encouraging, in Australia it is usual for such programmes to be voluntary, so this difference may simply be between teachers who are keen and conscientious enough to volunteer to take formal courses and those who are not. There was no ‘before’ measure to see if these teachers would have had better student feedback ratings without taking the training programme, simply as a result of either their characteristics or of their experience of teaching. There was also no evidence about what the goals of these postgraduate courses were, and whether these goals were .
Introduction

In the UK there are currently in excess of 70 training programmes for teachers that are substantial enough to be Postgraduate Certificates, or accredited by the Staff and Educational Development Association or the Institute for Learning and Teaching. These programmes differ widely in their length, their design, the topics they cover and in the teaching and training methods involved. They also differ in their underlying rationales and in their intended outcomes. Interviews with trainers about their goals has revealed a wide range of underlying beliefs, values and intentions (Coffey and Gibbs 2001). There is currently little evidence about which of these course designs or processes works best or indeed if any of them achieve anything at all. In some instances programmes have adopted specific training methods without:

- a theoretical rationale for using their particular methods;
- insights from the literature about why these methods might not always work;
- using research tools, in their evaluation, which are suited to identifying the impact of these methods;
- convincing evidence of the effectiveness of these methods on their programme.

Training now, however, is much more extensive and high profile than previously. It features in the 'learning and teaching strategy' of half of all 134 English institutions (HEFCE 2001b) and the Institute for Learning and Teaching is a prominent component of national policy. This national policy, and the attitude of institutions to investment in training, is open to influence by various vested interest groups. In the absence of evidence concerning whether current training provides...
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NOTE: All references from the ICED Preparing University Teachers Symposium, Vasa, Finland, can be found on the world wide web at: http://www.lgu.ac.uk.deliberations and obtained by email from the authors.
among others. The use of portfolios, originally developed by the Canadian Association of University Teachers (CAUT) in the late 1970s—as well as by Seldin in North America, and by Gibbs and others in the U.K. and Australia in the early 1980s—was recently found to be embedded in programs for the preparation of university teachers in The Netherlands (Wubbels, 1996) and Finland (Tenchula, 1996). The use of mentoring as an integral part of preparation practices is also evident in a number of countries, being developed in parallel with formal teacher preparation programs (Blackwell & McLean, 1996).

CONCLUSION

Practices for the preparation of university teachers in Europe and Australasia are developing rapidly in scale and sophistication, supported by formal policy and increasing professionalization. Clear trends are emerging in the forms this development is taking and international collaboration is accelerating development and creating more coherent trends with considerable benefits to those involved. At present, the U.S. is largely uninvolved in this development and its preparation practices comparatively limited in scale, sophistication, and organizational support in comparison.

In Europe there is considerable momentum behind the development of policies and practices which increase worker mobility between member states of the European Union through 'harmonization' of training standards and qualification frameworks. There is growing collaboration between voluntary national educational development organizations in devising common frameworks for accreditation for university teachers and the sharing of course materials—including distance learning programs—and an increasing willingness by governments to impose legal frameworks requiring compliance. There is European Union funding available to support such convergence of practice. The extent of current collaboration or uniformity of practice should not be exaggerated, but the direction of movement is clear enough. This is a very different environment than experienced currently in the U.S., where government intervention in specifying minimum professional training standards is less culturally acceptable even for public school teachers, let alone for teachers in private universities. The differences in these cultural contexts are likely to widen the divide between the U.S. and Europe in terms of policy.

The challenge for those involved in educational development will be to continue to share practices, materials which support preparation programs, and research evidence of the effectiveness of different preparation practices, regardless of the formal differences. The involvement of U.S. organizations in the activities of international organizations such as ICED will help. The awareness of U.S. university presidents and administrators of the potential economic and academic challenges posed by a fully-trained academic workforce in Europe would probably help, too.

NOTES

1. Abstracts of these ICED conference papers can be found on the world wide web at http://www.lgu.ac.uk.deliberations and papers can be obtained directly from the authors.

REFERENCES


There is a strong move towards accreditation, certification, and formal recognition of the learning outcomes of preparation programs. This may take legalistic forms. In the U.K., there is currently pressure from the main unions to professionalize as a way of protecting full-time academics from cheaper part-time staff. Some universities are introducing initial training as a legal protection, following cases where lecturers not gaining tenure successfully argued in court that they were not adequately trained for their job.

The most conspicuous instance of this trend is the Staff and Educational Development Association (SEDA) Teacher Accreditation Scheme in the U.K. (Baume & Baume, 1996). SEDA offers to accredit institutions whose programs meet certain requirements (which specify outcomes rather than processes or inputs) and embody certain values. As it specifies outcomes it can accommodate the accreditation of prior learning of experienced teachers who did not have any preparation when they first entered universities. University teachers who successfully complete such programs become accredited teachers. By the start of 1997, 30 institutions will have voluntarily applied for and achieved accreditation, paying for the privilege of being reviewed against SEDA standards, and 40 more will be at some stage of accreditation—altogether, a total of about 40% of the entire higher education sector in the U.K. Institutions in Australia and Singapore are also seeking accreditation, and at the ICED conference a number of countries expressed interest in the possibility of a European-wide accreditation system which could accommodate regional variations.

In the U.K., the effect of this entirely voluntary scheme on the length and sophistication of programs has been dramatic. Existing programs now have a standard against which to calibrate themselves, and universities which do not take preparation of their teachers seriously have a very clear benchmark against which to judge their own provision. External quality judgments are now much easier. Only five years ago such an accreditation system would have been unthinkable, as it still is in some countries, and provision would not have been adequate to meet the requirements of a worthwhile accreditation system. Now even the top research universities and the ancient institutions in the U.K. are seeking accreditation for their teacher preparation programs.

The ICED conference was established to improve international collaboration, but it was clear that the internationalization of practice for the preparation of university teachers was already well advanced in some countries. Weeks et al. (1996) describe an international “benchmarking” process, through which the provision for the preparation of university teachers at the Queensland University of Technology was systematically compared with universities at Alverno, Berkeley, Madison-Wisconsin, and Texas at Austin in the U.S.A., Brighton and the SEDA Accreditation process in the U.K.
ing assistant programs tend to be very short—perhaps 5–20 hours. In Australia, they would tend to be 60–200 hours. In the U.S., the programs can be huge—over 1,000 teaching assistants at a time at Syracuse or Washington University—where in Australia, over 50 at a time would be considered large. In the U.S., the focus would be on classroom practice—teaching assistants have limited scope for innovation and limited responsibility for course design or assessment, and preparation programs reflect this. In Australia, even new lecturers might have complete responsibility for a course, and so preparation would be concerned with course and curriculum design, assessment, evaluation and so on, with probably less emphasis on details of teaching technique.

In the U.S., a teaching assistant program might be underpinned by communication theory and cognitive psychology, where in Australia the extensive research evidence cited in McKeachie’s Teaching Tips might not be mentioned at all, but Swedish phenomenological work might. Teaching Tips, the most commonly used course text for programs in the U.S., has a 60-page bibliography, but cites almost no practice, evidence or theory from outside the U.S. These marked differences in conceptual underpinnings, sometimes colored by cultural imperialism or ethnocentrism, are quite striking.

A U.S. program might contain advice and feedback on a video of a short practice presentation, emphasizing micro-level skills in simulated contexts. The Australian program might involve reflective self-review following an actual lecture, emphasizing generic features and contextual variables.

Teachers’ experience of such contrasting preparation must inevitably be profoundly different, with profoundly different consequences for teaching later in their careers. In particular, teachers in Australasia may lack some of the detailed classroom techniques of their U.S. counterparts, and most academics in the U.S. will have received no training whatsoever in course design.

There are Australian programs which do not look like that described above, and U.S. approaches to preparation which do not resemble standard teaching assistant programs, but this contrast nevertheless has some validity. The source of these contrasts lies not just in traditions—and in national isolation from international developments—but also in different employment practices, quality assurance pressures, and attitudes to academic freedom. In the U.S., many universities rely on an army of teaching assistants, where this is not the case to the same extent in Australia. Australian universities are subject (or were until recently) to robust external quality checks of a kind which would encourage adequate initial training of teachers, where.

U.S. universities are largely free of such pressure. And managerialism and industrial approaches to human resource development are much more common in Australia than in U.S. research universities. The kinds of legalistic approaches to employment and government policy initiatives which are prevalent in, say, The Netherlands, are quite outside the experience of most U.S. universities.

CHANGING PATTERNS OF PREPARATION

A number of relatively clear trends can be identified in teacher preparation practices, and international collaboration and sharing of practices is making these trends more coherent and stronger. Programs are much longer than they used to be, much better funded and better supported with, for example, policy on the release of teachers from duties to allow attendance. At some institutions (e.g., Oxford Brookes University in the U.K.), departments are compensated with funds for replacement teaching hours, and lecturers are not allowed to be given teaching, research or administrative duties at the times the program is operating. These supporting policies can cost more than the mounting of the program, but may be crucial to its success. This change in attitude and practical support has come about partly in response to external quality assurance pressures—of a kind largely missing in the U.S. where such expansion and commitment is less marked—and the need for teaching to be much more cost-effective in the face of devastating resource problems.

Universities are taking preparation more seriously. Voluntary “drop-in” programs are being replaced by compulsory programs. In some cases, such as in Sweden and Australia, substantial progress has been made in the duration, sophistication and reputation of programs without the need for compulsory attendance. In Sweden, the government is imposing new requirements and in Australia there is a lively debate about the trade-offs between reaching teachers whom voluntary programs cannot reach, and about potentially damaging the style and feel of existing voluntary programs.

In many contexts, initial training is being linked to personnel decisions: to probation, tenure or the achievement of particular academic positions. At the University of Utrecht, as at the Swedish University of Agricultural Sciences at Uppsala, teaching qualifications are now required for Associate Professor status (Bouhuijs & Keesen, 1996; Beckman, 1996). It is interesting to speculate what impact it would have on the quality of teaching in the U.S. if a postgraduate qualification in teaching were a prerequisite for tenure! Currently, policymakers, scholars, and professional
concentration on theory may be characterized by reading, discussion and small scale research projects.

Reflective Practice
An increasing number of programs are informed by Schon's (1983) notion of the reflective practitioner and have an orientation to personal experimentation and reflection in teaching. They tend to be characterized by the use of reflective journals and action learning. A goal of such programs might be that the teacher is more aware of what is going on and can reflect on what has happened, rather than that any particular skills are acquired or that established theories are used in the reflection.

Personal Growth
Becoming a teacher can be stressful and a time of rapid personal development. Some programs have an orientation to personal support and the creation of a safe emotional climate characterized by peer learning communities, mentoring, a lack of formal assessment and the careful management of job demands.

Competence in the Job
This may involve a concentration on the nature of the job of being a teacher and its everyday demands and an orientation to the full range of academic roles and tasks. Such programs may be characterized by pragmatic free-standing training workshops in topics such as time and task management, supervising research students, and attending committees, rather than concentrating on teaching.

Contextual Relevance
This is where that which new teachers need to learn is individually negotiated to suit the context and the teacher. Assessment of the achievement of individual targets or goals may also be negotiated. This may be characterized by the use of portfolios.

Some teacher preparation programs include aspects of all these rationales, by design or accident, while some are designed within a specific paradigm, occasionally aggressively espoused. Sometimes a program operates within one rationale, but the teachers involved would prefer that it operated within another. For example, Isaacs (1996) describes a short initial program at the University of Queensland, Australia, which was concerned with developing reflective practitioners, but where the lecturers involved in the program wanted basic tips to deal with immediate practical problems in their teaching. Until these basics had been dealt with they were unlikely to be ready for open-minded reflection.

Doing It Better Versus Doing It Differently
A shared characteristic of most university contexts is the rapid change experienced in teaching, learning, and assessment methods brought about by such levers as declining resources, increasing class sizes and a shift in university missions towards the employability of students and away from traditional scholarly pursuits. In this context, some programs stress the role of the preparation of teachers in coping with and creating change, and in transforming practice (Roche, 1996), while others appear to assume that preparation is for contexts that have remained unchanged for decades and are unlikely to change. This difference between a focus on fine-tuning conventional practice or transforming it—between tackling yesterday's problems or solving tomorrow's—is one of considerable debate at present, and often highlights the differences of purpose between traditional research universities and new universities with more socially and economically responsive missions. Many of the most firmly-established programs are clearly oriented towards maintenance of the status quo, albeit slightly more effectively practiced than in the past. The form of initial preparation shapes teachers' attitudes towards innovation and change, and towards lifelong learning. Candy (1996) has argued that learning organizations and lifelong learning for academics requires a new form of educational development. There is a danger that traditional forms of preparation for university teachers will make them accepting of traditional teaching paradigms—and merely reactive to problems within this paradigm—rather than what Candy terms "anticipatory."

Contrasting National Patterns of Preparation
To attempt to make generalizations about one country's provision in comparison with another is to oversimplify, and also to take a huge risk. No sooner have you made a generalization than exceptions spring to mind or are brought to your attention. Nevertheless, the contrast between what one might expect to find in, for example, a research university in the U.S. versus one in Australia, helps to clarify the way the issues presented above can lead to very different forms of preparation. In the U.S., preparation tends to be pre-service, in the sense that it takes place while a teacher is still a graduate teaching assistant, before being appointed as faculty. In Australia most provision is in-service, for new lecturers, while they are in their first full-time teaching position and with a full teaching load to manage. In the U.S., teach-
rather than their outcomes, and length will continue to be a policy shorthand until a (much more difficult) consensus can be reached on desired or required outcomes.

**Comprehensiveness**

The first issue concerning comprehensiveness is which categories or types of teacher ought to be included. Early in the development of a university's provision for preparing teachers it is common for only one category of teachers to be catered for—in the U.S., it tends to be Teaching Assistants, while in the U.K., it tends to be new lecturers. It is still not common for all categories of teachers to be accommodated within a comprehensive support program. Increasingly, however, universities are developing “nested” programs starting with brief courses for Teaching Assistants and part-time teachers with a limited range of responsibilities and developing through induction for full-time teachers, extended certificate programs once induction is complete, and followed by project- and research-based Diploma, Masters or even Ph.D. programs for experienced teachers. In the School of Business at Oxford Brookes University new teachers, of all categories, are gradually introduced to a widening range of teaching responsibilities through a structured mentor program (Rogers, 1996). Some provision also targets professionals who contribute to teaching (as is common in health science programs).

Comprehensiveness also involves addressing all aspects of a teacher's responsibilities as an academic, not just classroom teaching. Increasingly programs are including management (Neumann & Lindsay, 1996) and other new academic roles (Brew & Boud, 1996). In the U.S., initiatives such as the "Preparing Future Faculty" program are starting to prepare Teaching Assistants for the kinds of academic roles they will be likely to fulfill in colleges rather than research universities (Lewis, 1996). Some provision also targets professionals who contribute to teaching (as is common in health science programs).

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Finally, the issue of comprehensiveness involves the debate between compulsory versus voluntary programs, and whether preparation which does not include the reluctant—or in particular those who simply do not value teaching—can be considered adequate. One solution to this dilemma is to make probation, tenure and, particularly, promotion decisions, take teaching sufficiently into account that it would be very risky for new teachers to avoid teaching preparation programs. The changes taking place worldwide in mechanisms to promote and reward excellence in teaching therefore provides a backdrop to developments in preparation. Some programs for new teachers culminate in the preparation of a teaching portfolio which may be used at a later stage in promotion, so that new teachers see their preparation as the start of a career-long process which is in their personal interest to take seriously.

**Outcomes and Threshold Standards**

There is more consensus about the “content” of preparation programs than about the standards they should achieve. Most want to produce competent teachers but few have a definition of competence that others could agree upon. The SEDA accreditation program comes closest to achieving a consensus and there is currently a debate about the possibility of national or international standards of the kind SEDA has specified (Baume & Baume, 1996).

With the notable exception of the U.S., an increasing proportion of university teaching preparation involves formal postgraduate courses leading to specific qualifications, and these normally have to be approved through conventional university course approval processes. As well, in the U.K. and Australia, these are subject to the normal use of external examiners and other robust quality assurance procedures. Formal award-bearing programs are also in operation in Norway, Sweden, and The Netherlands. Here the standards are those of normal academic peer review, and this may bias preparation towards theory and the study of education rather than towards the practice of education.

**Rationales**

There are marked differences between the rationales of university teaching preparation programs. The six main rationales in evidence are:

**Classroom Practice**

Probably the majority of small scale programs focus on what happens within the classroom and have an orientation to a relatively narrow technical notion of skill and competence, characterized by video feedback on trial teaching sessions.

**Educational Theory**

This may mean educational and cognitive psychology and communication theory but may also involve understanding the university as an educational system. In the U.K. and Australia the deep/surface approach distinction is a cornerstone of many programs. Some programs have as their goal that teachers have changed their conception of the teaching and learning process, in phenomenographic terms. A
overarching theme, that of setting the development of teachers as teachers in the context of their wider research, advisory, and administrative roles in universities and the need for programs to prepare academics for all their roles.

Descriptions of particular programs and their underlying rationales: This was the largest single category of papers and examples of contrasting practices from different European countries include Fuglem (1996), Kolmos (1996), and Lonka (1996).

This chapter will present a selection of overarching themes from the conference—those issues, contrasts, and similarities which were highlighted again and again in debate—and identify directions of change in the preparation of university teachers around the globe.

DISTINCTIVE PATTERNS
Some countries have national policy frameworks which shape the provision of training for university teaching. For example, in Norway the government has mandated compulsory initial training for all university teachers, lasting six weeks (Fuglem, 1996). The Swedish government is following suit. In the Netherlands there is a "binary" higher education system with extended compulsory initial training in the non-research sector and very uneven provision in the research universities. This varies from no provision to compulsory provision for all new academics up to and including new full professors.

In many countries there is considerable diversity in the provision of teacher training, and it is difficult to characterize the overall pattern. For example, in the U.K. programs vary in length from about 40 hours to about 500 hours, sometimes leading to a postgraduate qualification such as a Certificate in Teaching in Higher Education. The Staff and Educational Development Association (SEDA) has developed an accreditation scheme for programs, with participants in such accredited programs becoming accredited teachers as described later in this essay. Provision of proper classroom instruction skills for graduate students who teach is patchy, and for part-time and short-contract teachers extremely poor—an issue highlighted by the Higher Education Quality Council in its audits of institutions' quality assurance systems (HEQC, 1994). Responsibility for teacher preparation is held by central human resource development offices in some universities and by educational development units in others, and the location of responsibility is reflected in the content and style of their respective programs. Some of these HRD outfits "outsource" the preparation of their university teachers to commercial providers. The Oxford Center for Staff Development at Oxford Brookes University, for example, has run programs for a wide range of institutions including the University of Warwick and the London School of Economics.

In many countries there are distinctive approaches to the preparation of university teachers which are unique to particular universities but which are not followed elsewhere. For example, at Aalborg University in Denmark there is a very distinctive project orientation and the preparation of teachers is therefore oriented very closely to project supervision as opposed to other kinds of teaching practice (Kolmos, 1996). At the University of Utrecht in The Netherlands the problem-based approach used in medicine and in other subjects again influences the nature of the preparation of university teachers.

In some countries there is very little current provision of teacher preparation programs, and what does exist is often so small scale and informal that it is difficult to identify and characterize. Even where isolated examples of well developed programs exist at one institution (e.g. Garcia, 1996) this reveals little about the extent or nature of provision nationally.

DURATION
In the U.K., the standard qualification for school teachers is the completion of a B.Ed. program, which lasts for approximately 5,000 hours. A Postgraduate Certificate of Education which qualifies those who already have a first degree—and which focuses on process rather than subject knowledge and is therefore more comparable to a program for university teachers who already possess subject matter expertise—lasts for approximately 1,500 hours.

The longest programs for new university teachers in the U.K. and The Netherlands are about 500 hours—about a third of the minimum approved length of that for school teachers. In contrast one program for university teachers in the U.S.A. described at the ICED conference lasted for three hours. There is clearly an issue here about how long a program is appropriate. There is a growing consensus in higher education in Europe and Australasia that in the current political and economic climate about 200-250 hours is a reasonable allocation for initial training leading to a qualification. However there is also a strongly held view that programs should ideally not be specified in terms of duration but outcomes or competencies. Several programs already operate in this way and the SEDA accreditation scheme (described below) does not specify inputs or duration but only outcomes. Nevertheless most undergraduate and postgraduate courses worldwide are defined by their length...
BACKGROUND
The core sources for this chapter are unpublished papers presented at the 1996 conference of the International Consortium for Educational Development (ICED), held at Vasa, Finland, entitled Preparing University Teachers. The papers for the conference were of a number of distinct types:

- **Summaries of national practices:**

- **Bi-national comparisons:**
  E.g., D'Andrea (1996) contrasts the North American emphasis on Teaching Assistant training with the U.K. emphasis on training new permanent full-time teachers;

- **Reports of studies of the effectiveness and impact of preparation programs:**
  E.g., Nasr et al. (1996) report the differences between student feedback ratings for Australian lecturers who have undertaken a full Certificate or Diploma-level preparation program with those who have not, and Gieritz (1996) reports qualitative data from interviews with those who have taken a compulsory program in Norway;

- **Explorations of key issues and themes:**
  E.g., Johnston (1996) emphasizes the need, in the current context of dramatically fast changes in universities, for preparation to produce teachers who can transform teaching and learning practice rather than simply reproduce conventional practice, a theme which emerged as a central concern worldwide. Brew and Boud (1996) identify a second
academic achievement towards which lecturers seem to believe they should be striving.

Notes

1. The Open University provides degree level education for adults studying part-time at a distance. There are no formal entry qualifications. The teaching materials consist of specially prepared correspondence texts, television and radio broadcasts, supported by face-to-face tuition at the local level. The Social Science Foundation Course is a “full credit” course extending over a nine month period. Six credits are required for an Ordinary Degree.
2. Further details of O.U. students approaches to study are described in Morgan, Taylor and Gibbs, (1982).
When you learn things — well it’s difficult to think of examples but like — unemployment — in the past I was inclined to think that some people didn’t want to work, they just couldn’t be bothered and preferred to be on the dole — you tend to see the other side of the coin. I’ve learnt to be more critical, watching T.V. programmes you learn to be more objective to look at both sides of an argument. I argue with people now, you know, — I’m not afraid to come out with an alternative view.

Again, as in the previous case study, integrating the concepts of educational orientation, conceptions of learning, and approach to studying enables us to build up a picture of Sally Brown’s world as a learner. There is a clear link, both logically and in terms of her own perceptions of gains from the course — her descriptions of an increase in confidence and seeing the world differently. In commenting on the details of how she tackled particular learning tasks, she described an active and thoughtful approach — planning essays, working on one topic at once. However, many of the details of her studying, for example, note-taking, seem to be constrained by her initial conception of learning. By the end of the course she had clearly changed in her conception of learning, from seeing it as “new knowledge of different objects” to “understanding . . ., broadening your outlook”. With this more sophisticated conception of learning, we would expect her to take a deep approach to studying more consistently. The following table summarizes Sally’s experience of learning in her first year of O.U. study.

**TABLE 10.3**

<table>
<thead>
<tr>
<th>Educational orientation (before the course)</th>
<th>Conception of learning (before the course)</th>
<th>Approaches to studying (during the course)</th>
<th>Educational orientation (end of the course)</th>
<th>Conception of learning (end of the course)</th>
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</thead>
<tbody>
<tr>
<td>Personal intrinsic approach</td>
<td>Learning as gaining new knowledge</td>
<td>Surface approach — appeared</td>
<td>Personal intrinsic perceptions of gains</td>
<td>“being critical”</td>
</tr>
<tr>
<td>Development, gain</td>
<td>Saljo’s Level 1</td>
<td>to be attempting</td>
<td>and relating ideas to one’s own own</td>
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<tr>
<td>Confidence: Secondary personal extrinsic</td>
<td></td>
<td>a more active approach</td>
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<td>approach to life</td>
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<td>— proof of capability</td>
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The case studies provide two examples of descriptions of the learner’s world. By relating together the concepts of educational orientation, conceptions of learning, approaches to study and outcomes of learning, we can develop a conceptual framework which is grounded in students’ experiences of learning. The evidence is, of course, not limited to the two case studies: we are drawing on the whole sample to provide many other instances of connections between these concepts.

We have established that educational orientation provides a useful construct for understanding a student’s personal context for study. It encapsulates the complex nature of a student’s aims, attitudes, purposes for studying. Moreover, educational orientation is not an invariable property ascribed to a student. It describes the relationship between the individual and both the course of study and the institution — it can change and develop over time. As we saw, John Williams developed, during the O.U. foundation course, towards a vocational intrinsic orientation with some indications of academic intrinsic orientation. Before the course, these orientations were hardly discernible.

Educational orientation is an important construct as it contributes to our understanding of what students learn. Besides the qualitative differences in learning outcomes described by Dahlgren (Chapter 2), which focus on the variations in how students understand specific concepts, students’ overall perceptions of gains from studying can be understood in relation to educational orientations. Students’ perceptions of gains from study, illustrated in the opening quotations to this chapter, can be related logically, and empirically to their educational orientations. The case studies of John Williams and Sally Brown demonstrate these relationships. We can see how their personal context of study has a powerful influence over how they approached studying and what they gained from the course.

Taking the case studies in conjunction with the descriptions of the main categories of orientation, it is possible to provide a view of learning from the learner’s perspective in a fully holistic way. The linkages between the major concepts will be explored more fully in the final chapter, but already the powerful influences of the student’s idiosyncratic purposes in studying, and of the students perceptions of the learning context within the institution, are clear.

Many lecturers seem unaware of the very different orientations held by their students, and so, as we saw in Chapter 1, tend to blame students for laziness (or lack of motivation). They thus assume that there is a single reason for being at university or college — to obtain the highest level of qualification. No doubt that was the lecturers’ orientation: they almost inevitably had, or developed, a strong academic orientation. The research described in this chapter serves as a strong reminder that most students have a complex mixture of reasons for continuing their education, and few of them aspire to (or believe themselves capable of) the pinnacle of
This response was quite unlike the rest of this interview where she was far more articulate. She appeared to take the question seriously and to say all she was able in response. So on the one hand, Sally had a predominantly personal intrinsic orientation which one might expect to be accompanied by an understanding of personally meaningful learning, but on the other hand she actually gave an unsophisticated response to our question about the nature of learning itself. When we interviewed Sally about her approach to studying half way through the course, she revealed a slightly confusing picture. Her way of describing her studying sometimes indicated a surface approach.

I have got the time, but I find it difficult to concentrate. I sit in here and sometimes don’t do anything really. I have got all the work done but it doesn’t go in. I think it is easy to do them (the multiple choice questions) as you go along. I tended to skim rather than reading it all properly and I don’t feel at all that I have taken all this in. I just don’t... I mean it shows how well I read it because I can’t remember half of what I said. I read it very quickly and usually I read it maybe two or three times because I don’t think you take it all in at first reading.

Similarly, her description of note taking indicated a surface approach and can be linked to her “taken-for-granted” conception of learning.

Sometimes I underline bits — I underline things that I think are particularly important. I don’t make notes very often — but because I am so bad at it, I’ve got this book and it’s got all the bits and pieces in and various odd notes from different parts. And I decided that I wasn’t doing very well at this so that is why I decided to keep it more in the Blocks themselves. I’m not very good at taking notes — they are all a bit of a muddle really.

Her problems with study techniques, note-taking for example, and dealing with the vast quantity of printed material supplied by the O.U., can be seen as partly a consequence of her conception of learning and also her lack of prior academic experience.

In other parts of this interview, Sally seemed to be attempting to take a more active and reflective approach to study. She planned her essays, didn’t like going on to new subject matter until she had completed her essay in order to avoid confusion, carefully extracted crucial points from the text, and so on. At one point in the interview she described as outcome of her learning which reflected her intrinsic orientations:

I think it’s very interesting already when you watch the news and different things, the things they say seem more relevant now. They use the words that perhaps I wouldn’t quite have understood before and having done the work, things tend to click... whereas I used to think that inflation was inflation before, you relate it to different kinds now and the different policies that are put in. You see the differences between them better than ever I could before.

Contact with other students and the tutor at tutorials was very important for Sally and she found that just knowing that other people had the same sort of difficulties as she had, gave her the confidence to carry on. She also felt that passing the assignments had given her much needed encouragement.

I’ve done four essays now and I’ve passed them all, so I must be doing it adequately I suppose, but I don’t feel awfully confident. But then, nobody else seems to either, so I don’t feel too bad about it.

By the time the course was finished Sally presented an altogether more congruent picture. She distinguished between learning and memorizing.

Interviewer:
When you think of learning in general, what does learning mean to you, what does it mean to learn something?

Sally:
Well it certainly isn’t (laughs) learning everything that’s in those books. I couldn’t remember half... it’s a hard thing to define really. I think it’s understanding more than learning by heart — learning to be more critical of things — just really broadening your outlook on things — sometimes you don’t think that you’ve actually learnt it but all the time it keeps cropping up... you know, you’re looking for more in life and you keep thinking of things like Maslow’s hierarchy of needs and things like that.

So that after the course her conception of learning fitted very well with her dominant personal intrinsic orientation to study. She was even using ideas from the course to explain her own attitude to learning or needs from the course. This reflexivity shows an active approach to learning. Sally felt much more confident in herself. She had passed the course and was feeling much more positive about her ability to study. When she talked about the gains from studying the course we can see how they are related to her personal intrinsic orientation — being changes in her own ability and confidence, new interests and broader knowledge.

I feel different somehow, I feel much more confident and I think I’ll be much happier next year. I don’t think I will worry quite as much.

She also said that the course had changed her approach to life.

Well, I think it teaches you to be more broad minded — you don’t think that you are narrow minded but you realize that you are
### TABLE 10.2
**John Williams: a case study**

<table>
<thead>
<tr>
<th>Educational orientation (before the course)</th>
<th>Conception of learning (before the course)</th>
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<th>Educational orientation (end of the course)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Academic extrinsic</td>
<td>“gaining rules &amp; procedures” — Saljo’s Level 3</td>
<td>deep-strategic approach — emerging vocational and academic intrinsic orientation</td>
<td>Academic extrinsic</td>
<td>“understanding and relating ideas together” — Saljo’s Level 4</td>
</tr>
<tr>
<td>academic progress, good grades</td>
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<tr>
<td>minimum effort: secondary vocational</td>
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<td>intrinsic</td>
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**Case study 2: Sally Brown**

Sally Brown is a housewife in her mid-thirties with two children of primary school age. She had taken an ‘O’ Level in English at night classes some years earlier but apart from this, had no qualifications, and had not studied since leaving school. The impetus to apply to the Open University had come from her father who was half way through an O.U. degree and had passed on information to her.

Before the course started, Sally talked about her reasons for studying. She appeared not to have an intrinsic academic orientation, since she had no specific interest in the subject discipline:

> It wasn’t really particularly for any of the subjects, ... because I think that once you get started you can get really into doing it, hopefully.

She had vague concerns that in the future a qualification might be useful to get a job (vocational extrinsic orientation).

Apart from providing me with an interest now it might be useful to me, sort of later on when the children get older.

There was also some indication of a personal extrinsic orientation.

> I didn’t get much academic qualification at school ... I’m testing myself to see what I can do ... I want in a way to prove to myself that I am capable of doing the work because I’ve never really done anything as an individual.

But the overwhelming impression Sally gave was of a strong personal intrinsic orientation.

I’m hoping that it will give me more confidence in myself and to actually be able to cope with different situations and life in general. I feel that I need something and hopefully this is going to broaden my outlook ... a sort of greater insight into the way other people live and the way other people think. I think one tends to be very biased. You live your own life. I’m hoping that I’ll be able to see things from different points of view and lead to more tolerance really of different kinds of people and different kinds of groups ... and also to play a more active role in society instead of always being the one who sits back and does nothing. I think if you could understand it more what causes some problems you could sort of perhaps react to it in a better way, and hopefully sort of perhaps help others to do the same but I don’t know whether it will really make any difference.

The main reason for doing the course for Sally was to relieve the boredom of being at home all day. She also felt a lack of confidence in herself generally and hoped that the course would change her into a more accomplished and competent person.

She had chosen the course, partly through a process of elimination, and partly in the hope that the content would be relevant to her own life.

I thought that, reading through the description of the course, it sounded quite interesting and would teach you more about life in general and the way that things arise. You hear about so many different things on the television but you don’t seem to really understand what they are talking about. I thought this would be a very useful course to take.

At the beginning of the year Sally was very anxious about her own ability to cope with the course and although she wanted to become more competent in social situations, she was rather frightened by the prospect of tutorials and the obligatory residential Summer School. It was clear that the course was going to be a considerable challenge for her.

She had no experience of post-compulsory education and appeared to have a somewhat unreflective, taken for granted conception of learning (Conception 1).

**Interviewer:**
When you say learning, what do you mean by learning, what do you think of?

**Sally:**
Um ... (laughter) ... Learning? Don’t know really ...

**Interviewer:**
Can you describe what learning is?

**Sally:**
Gaining new knowledge of different subjects, you know ... um ...
are...What I tend to put down is the main points in each block, what the answers are in the main points of each block. To be quite fair about the way I am doing it, I suppose I am doing the minimal study to sort of achieve the end result and so from that point of view, my need is to have something which is more succinctly encapsulated and I use the cards in that fashion. I've been a bit naughty on it because I've worked out that you don't need to do all the assignments and I am just doing the minimum. It really means that I have got to get reasonable marks for the ones I am doing because I'm not getting the average to bring me up.

John is clearly going about studying in what was described in Chapter 9 as a strategic manner, and seems to be confident in what he is doing. In terms of deep and surface approaches to studying, he can be described as taking a deep approach. He is attempting to identify the "main points" in the Open University correspondence texts and summarize them more succinctly. However, he is doing this in a somewhat external, impersonal way or purely in a cognitive manner. This is not a deep approach in the without apparently considering all the evidence. This way of studying can be seen as a rational response to the O.U. system, since students study part-time at a distance and have to adapt to considerable demands of the "full sense" in that he seems to be taking short cuts to the main points, without apparently considering all the evidence. This way of studying can be seen as a rational response to the O.U. system, since students study part-time at a distance and have to adapt to considerable demands of the O.U. in terms of regular pacing of correspondence texts and assessment tasks. For John, his approach was successful in the sense that he was obtaining reasonable assessment grades, however, he was well aware that learning could be a more personal activity in other situations.

I think on some of the essay questions you have to go deeper and beyond the definitions in the block and perhaps try and read a bit and become more analytical and critical but this involves time, which is a precious commodity. I tend to concentrate on the middle course of getting what's in the block.

At the end of the course, in our third interview, we again asked John what learning consisted of.

John:
Well it certainly doesn't mean parrot fashion, I think it's understanding it... Interviewer: What is involved in understanding something?

John:
Well I suppose by understanding something, it's the ability to be able to read a theory and be able to explain it to someone who hasn't read it before and doesn't understand it, to be able to relate it to someone who is unconnected with the subject.

In terms of conceptions of learning we can make a tentative interpretation that John has changed from seeing learning as "gaining rules and procedures" to seeing it as "understanding and relating ideas together"; i.e., a change from Conception 3 to Conception 4 in terms of ajo's framework.

In our third interview, although John had enjoyed the course, he felt that it was really only the basis for further in-depth studying.

I enjoyed it—it took up more time than I thought it would. I didn't have enough time to spend on it. I think you cover a lot of things reasonably superficially; you don't get into anything in any great depth and it's made me keener to get on to something at 2nd or 3rd level where you can study one subject and spend time on it.

This attitude appears to be a reflection of his predominantly academic extrinsic orientation—i.e. to continue on the educational ladder. However, his desire to study a subject "in depth" suggests a change towards an academic intrinsic orientation.

John's secondary orientation—vocational intrinsic—is also reflected in what he felt he gained from the course:

If I hadn't done the course I think I would have missed a lot of what I've learnt in relation to my work — about the psychology of work—whereas I was inclined to take a decision fairly quickly on certain things, now I do have a certain experience having studied a bit of psychology and sociology and I do try and perhaps see how things are going to inter-relate and affect people — spend a bit more time on it and be a bit more thoughtful than I was before.

From this last quote, we can see that taking the course had affected John's approach to his work and that he was seeing the relevance of the course material to his everyday life. It would be interesting to follow this student through more years of studying to see if this personal meaning extended into his orientation and conception of learning in future years.

Integrating the concepts of educational orientation, conceptions of learning and approach to study provides a framework for understanding John's experience of learning. His primarily academic extrinsic orientation links to his strategic way of studying, and taking a deep-approach, although in a rather external and impersonal manner. His approach is consistent with a conception of learning based on using rules and procedures. The links between concepts exists both logically and, as this case-study shows, also empirically. By the end of the course, from his perceptions of gains from studying and how he sees studying developing in the future, we can detect some change in John's orientation. He seems to be moving towards vocational intrinsic orientation with some academic intrinsic orientation. The following table summarizes these links and changes.
understanding what a student gets out of a course. These interrelated concepts can be seen as increasing levels of generality for describing students' experiences of learning.

The two case studies that follow are extracted from a longitudinal study of 29 Open University Students. They will be used to illustrate the links between these concepts which have been found in the main study; i.e. integrate orientation to learning, conception of learning and approaches to studying. The case-studies are of students taking the Open University Social Science Foundation Course who were interviewed on three occasions (i) before the course, about their orientation to learning and conception of learning; (ii) during the course, about their approaches to studying one particular piece of teaching material and completion of an essay assignment and (iii) after the course, about what they had gained from the course, (Morgan et al., 1980).

The two case studies, which use pseudonyms to preserve confidentiality, have been selected to illustrate how students with different orientations go about studying in vastly different ways.

Case study 1: John Williams

John Williams is a Personnel Officer working in a London firm. He is in his early forties married with two children. He has professional qualifications, and has previously attempted a degree course on a correspondence basis but the course did not fit in with his other commitments and he completed only one year. He felt however, that to get a degree would be a 'good thing' and when he heard about the Open University he decided to try again.

It seemed a good idea to take a degree — I'd heard of the Open University before but I was never quite sure how it operated. I'd tried before to do a degree — an external London but it was the time keeping really — it involved evening lectures and I only did the first year. This seemed like a fairly good way to have another attempt.

His main orientation seemed to be an academic extrinsic one and he described how he hoped to do the work quickly.

I don't really know how keen I'll get. I mean one would obviously try to do as little as possible; but obviously you’re going to do a fair bit to get through it properly. — If I can get it concentrated down to as few hours as possible, commensurate with getting the degree and enjoying it, I will.

The emphasis in these statements is on efficiency and from the beginning John's concern with progress through the system was clear. There were also, however, hints of vocational intrinsic orientation where he talked about why he had chosen to study social sciences.

I think it was possibly because the sociology ones are more related to the day to day environment things that I do — I don't think it will help me in relation to employment prospects because I think when you get to a certain age, you've either got a level of experience or you haven't. It may well help me because of a broader knowledge and applying or investigating routes in relation to personnel and industrial relations problems I hadn't thought of before, but I don't expect anything very startling, you know.

In our first interviews, besides orientation to learning, we also asked John what he thought learning consisted of. He replied as follows:

John:

I would say assimilation of common sense in relation to the course I was doing. Common sense which was related to sociology — as opposed to sort of parrot-fashion learning.

Interviewer:

What do you mean by common sense?

John:

Well it seems to me there are various theories which I found when I looked at the block in relation to unemployment, crime, there are various yard sticks social laws and rules of thumb that can apply, statistics, and these are obviously the basic guidelines in relation to those problems and one needs to know how to apply them and what they are.

John's conception of learning appears to parallel the intermediate Level 3 described in Chapter 3; “Learning is perceived as the acquisition of facts procedures etc., which can be retained and/or utilized in practice”.

John's primarily academic extrinsic orientation and this procedural conception of learning links in fairly closely with his approach to study. This was characterized by a wish to do things in the shortest possible time, using strategies of note taking that were geared to getting out the main points of the units for easy revision.

When he was interviewed again, John was half way through the course and had settled into a routine study pattern which reflected his concern with efficiency. He was enjoying the content of the course and could talk about the concepts he was learning. The overwhelming impression of his approach to study was that it was a strategic one. He had learnt how the system operated and was working through the course in a way which was characterized by the minimum effort necessary to understand the main points. He described how he studied as follows.2

I have a quick look and see how long I am going to take on it and then I just read straight through it and use the felt tip pen ... I ring various theories as I go through, I possibly go through it and I make a few notes on small cards on what the various theories
different points of view and not be too single minded about things; I hope at the end I'll be able to converse with people more easily without getting nervous.

Being at home it is easy just to go to coffee mornings and just to watch play school which are all right in themselves but it is not the end. I would hate to think of myself doing that this year, next year and the year afterwards — and also I would like to think that it might make me more interesting really — I want to feel that I've had an exciting day and I've learnt something today or read something today and so hopefully enrich me as a person.

**Personal orientation — extrinsic**

(Compensation)

Extrinsic personal orientation is seen most clearly where students are doing the course to test their own capability. They want to find out if they are capable of a degree and if so, to what level. These students are more concerned with grades and feedback than about the content of the course. This orientation again is prevalent in the O.U. It can be seen as a sort of compensation for the lack of further education in the past. Students' reasons for joining the university for this orientation are to do with a feeling that they have been deprived of opportunities in the past or incorrectly judged by the education system. Open University study is hoped to prove to themselves and to other people that they are capable of higher education.

It's something I've always wanted to do. For personal reasons between me and my parents I didn't go to university when I should have done. I've had a hankering ever since to discover whether or not I could have done it.

I suppose I want to prove something to myself. The one piece I have read said it was the most difficult way anybody had ever devised to get a degree and I thought — well, if I can do it at least it will prove something to me if to nobody else, and I'd like to.

Almost as soon as they start the course it becomes important to these students to succeed in passing the course, or at least in “studying the course”.

It is important, yes, now I've started it is going to be quite important. If I feel that I don't suppose I had a challenge not ever probably not for me to have to do myself so it is important I have to prove, perhaps to myself that I can stick to it and do it. It is important, but just to me.

I'd say fairly important — I feel it's going to be the only chance I've got to do this and if I drop out of it I won't get another chance, not in the foreseeable future and by then it will be too late.

Personal satisfaction, . . . . It won't help me with my job, I don't intend to go marching off in six or seven years time clutching my B.A. and demanding a super job somewhere. I just want to do it and see what happens.

**Social orientation**

This category is characterized by students who appear to have social aims which influence the way they go about working:

Put it this way, I would have gone to university anyway — it was irrelevant which course.

The outside activities that I do — (radio and film unit and sport) are very important. There is a lot to do outside and in some respects I tend to put off work because of them. If there's something to be done I'd rather do that than something else. Then I try to keep it balanced — from the point of view of university education — this side of it is just as important as the academic side, and if not — more important I suppose because you can always study in a correspondence course or something like that but you can't get this kind of social thing and development anywhere else.

Social orientation appears to be extrinsic almost by definition; as it cannot be related to the course itself. But students often have aspects of vocational or academic orientations as well. Social orientation seems to affect the decisions students make about how to spend their time and may mean that the course is allocated a certain percentage of the available time and social activities the rest.

Very few O.U. students show this type of orientation almost certainly due to the nature of the teaching — mainly by correspondence. However, some students place a high priority on tutorials because these provide an opportunity to meet people. The university life at a conventional university does, in contrast to this, provide numerous social activities, and at Surrey some students appeared to have these things in mind when they decided to apply to university.

**Case-studies of student learning**

The focus of this chapter, the learner's world, develops a more holistic description of students' experiences of learning. Having described the importance of a context for learning, particularly a personal context, it is possible to develop a fuller picture of the learner's world.

In Chapter 3, the concepts of approaches to studying and conceptions of learning were introduced. These two concepts can be linked together with the concept of educational orientation to provide a framework for
not that important. As long as I'm getting a pass mark or reasonably above, then good — I'm not going to go all out to do the best I can. I go out to get a reasonable mark.

The orientation a student has helps to explain the differential effort put into studying by different students. The above student, for example, did little beyond the minimum requirements of the assessment system. Given his aim — to get a degree in order to get a particular kind of job, and his belief that the grade of degree would not matter — the amount of effort he was willing to make, is understandable.

For the O.U. students with this orientation there was sometimes a fear that employers would not recognize the worth of their degree and this caused some anxiety. However, the expectation for many of them was that the degree would help them in promotion.

To get into this apex (top of the hierarchy) is going to be quite hard... okay I've got two sets of professional qualifications but I need this one to go with it. Because in a lot of people's eyes, particularly management trainers and development people, a degree is everything — it proves you've done something and it — you've trained yourself to think and express yourself clearly.

For this student, the choice of degree subjects was only important because the employer had to be able to see the relevance of these courses to the job. However, for those students who were hoping that the degree would qualify them to start a new career, the choice of course was less important.

When the degree course was only important because the employer had to be able to see the relevance of these courses to the job. However, for those students who were hoping that the degree would qualify them to start a new career, the choice of course was less important and often a hit or miss affair. This was in contrast to those who were intrinsically interested in the training aspect of taking a course; then its relevance became crucially important to them personally.

For some of the O.U. students the degree course was seen as a way of ensuring that they could get a job sometime in the future. This was particularly so for women with young children.

I've got nothing behind me absolutely nothing. No qualifications — I've only had odd jobs before — as soon as the child is old enough I'll have to get a job. Somebody said — 'the O.U. that's your best bet'. It's an education basis — something behind me. You know, if I go for a job now I haven't got a chance — no way. And I know nothing except factory work and that's not what I want. I'm not all that bright but I'm not thick either. So I want something so I can go and get a decent job.

Personal orientation — intrinsic
(Broadening)

This category is characterized by students who are personally orientated and interested in being tested or improving themselves as individuals. The intrinsically interested student is concerned more with the broadening effect of education and is using university study as a means of changing.

In some ways the university is seen as a sort of finishing school, a place where new ideas and challenges can be used for self-development and improve your ability to cope with life.

It's a broad course — and I think it is an excellent course for someone like me who wants enrichment of life having missed the opportunity earlier in life.

In the course and all the other sides of university life these students look for stimulation and challenge, they are only concerned with the content of the course, insofar as they can see its usefulness as a vehicle for change and personal development.

The topics I like I will sit and read for ever — if I think it will be useful to me then I'll do more but some things aren't that useful.

This personal orientation is very common among Open University students and at Surrey University among mature students. For these students, the incentive to join the university comes often a feeling of frustration with their life.

I hadn't thought about that at all but I felt that I had to do something. I thought I was going round the bend being at home and I wasn't raring to go to get a job. I like looking after the house and the baby and that sort of thing, but somehow I wanted to do something else.

I suppose it was waking up one morning and finding I'm 35, sort of male menopause — I can't sit around here watching T.V. for the rest of my life — let's do something.

The importance of the course to these students concerned how it might change them as people making them more able to cope with life and making them more interesting people. They saw their study as purely of personal significance.

It is important to me because it's the only thing that is me and that only I'm doing and that none of my family or friends are doing. It doesn't matter to anyone else results wise how you get on — and I think it is purely you doing it and you getting something out of it for yourself.

Again, the choice of course was almost irrelevant and was likely to be chosen by means of elimination of alternatives rather than by positive choice. These students hoped that the social science course would help their understanding of everyday life. The broadening aims were summed up in their response to questions about their expectations of the course, and what they expected to gain from it.

Well I except a better insight into the way other people — I think one tends to be very biased — you live your own life and that is the way it is. I'm hoping that I'll be able to see things from
I wanted to do sociology... the interesting thing about sociology is that a part of it is called the sociology of education and— in studying education I'd become more aware of it in a more objective way — you start to see the place it has in society. You see sociology isn't a nine to five study, it's a continual thing in your social life — you are being a sociologist... you are assessed so you've got to do a certain amount of course work... I copy as many essays as I can and do that minimum amount of work in psychology and philosophy— in sociology I just try and do as much reading as I can and then when I write essays I always bring in much more — but I hardly ever answer the question — I'm always much too concerned with other things of interest to me.

So, the main concern of these intellectually orientated students is to be allowed to follow their own intellectual interests. In the interviews, these students often mentioned particular lectures which had fired their enthusiasm for parts of the course and they particularly appreciated parts of the course where this sort of choice was restricted.

Academic Orientation — Extrinsic
(Educational Progression)

In this category students are primarily interested in progression through the educational system. They tend to have chosen the course because they had been successful in the subject at school, rather than study from an intellectual interest in the subject; it was thought of as 'the next step':

I wanted to do something and I've done evening classes but it wasn't really enough — I don't know — I've got through that sort of stage.

Well basically I'm studying it because I did three 'A' levels and one of them was sociology. English doesn't seem too good really unless you want to teach and economics — well I find the maths difficult... I suppose most of my work is for assessment. I do tend to try to work — to do my best as I can in essays because they're assessed. If you try to work hard you'll get a good mark then you haven't got much pressure when it comes to the exams.

Within this category, students are interested primarily in passing the courses and getting the degree. They tend to be competitive and to lay great stress on getting good grades. In contrast to the intrinsically interested academic students, they tend to be 'syllabus bound' and in some ways may be described as 'model' students, in that their essays were always in on time and they work evenly over all the subjects in the syllabus. The students with this orientation prefer to have clear guidelines as to what is required for assessments and to criticize parts of the course where there is little guidance.

Vocational orientation — intrinsic
(Training)

One of the courses studied at Surrey University was a degree in Hotel and Catering Administration, and, as one might expect, many of the students who were studying the course were vocationally orientated. There was, however, a profound difference in the concerns of students according to whether their aim was to get a qualification in order to get a job in the industry or whether their aim was to be trained as hotel managers. The latter were intrinsically interested in the course and were critical of any parts of it that they thought were irrelevant to their future careers. They tended to place emphasis on the practical side of the course and to like the industrial year best of all. Since their interest was in becoming trained, students with this orientation tended to work hard on the course while they could see its relevance to their chosen career.

At the Open University students are sometimes thinking not of a future career but of a current one:

... it appealed to me because the reaction of people is terribly important and it is not just seeing the reaction — I want to know the reason people react under various kinds of circumstances. So far, all I have is observations you know; experiences. It's important because I hope it will help me to understand people more. But I'm not going to use the qualification at the end of the day so that side of it is not important to me.

As we see here, this category is characterized by vocational concerns and an intrinsic interest in the course.

Vocational orientation — extrinsic
(Qualification)

Some of the Surrey students, rather than studying the course as a training, were interested in qualification aspects of getting the degree. These students were concerned about getting through the course and passing at the end. It mattered to them that a qualification was recognized by the profession they aspired to. Some students had investigated how far the grade of degree mattered in gaining a job and on that basis decided how much work they would do on the course. Some students decide that grades are unimportant to them.

I'm in for a third (-class degree) at the moment, I think I'm better than a third but I'm not that bothered — I don't think our degree is recognised that much by industry. And so you could say that it is
Educational Orientation

A study of students' orientations to learning at Surrey University (Taylor, 1983) identified four distinct types of orientations. These were academic orientation, where the student's goals were to do with the academic side of university life; vocational orientation, where the student's goals were to do with getting a job after university; personal orientation where the student's goals were to do with their personal development; and social orientation where the student's goals were to do with the social side of the university life. The first three of these types of orientation could be divided into two sub types according to whether the student was directly concerned with these goals. These sub-types were labelled intrinsic and extrinsic, respectively. Taylor found that the concerns that a student had while studying at university were intimately connected to the type of orientation they had and that these orientations and their concerns helped to make sense of the amount of effort the student made on different aspects of the course and university life (see Table 10.1).

<table>
<thead>
<tr>
<th>Orientation</th>
<th>Interest</th>
<th>Aim</th>
<th>Concerns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocational</td>
<td>Intrinsic</td>
<td>Training</td>
<td>Relevance of course to future career.</td>
</tr>
<tr>
<td></td>
<td>Extrinsic</td>
<td>Qualification</td>
<td>Recognition of worth of qualification</td>
</tr>
<tr>
<td>Academic</td>
<td>Intrinsic</td>
<td>Follow intellectual interest</td>
<td>Room to choose stimulating lectures</td>
</tr>
<tr>
<td></td>
<td>Extrinsic</td>
<td>Educational progression</td>
<td>Grades, academic progress</td>
</tr>
<tr>
<td>Personal</td>
<td>Intrinsic</td>
<td>Broadening or Self-improvement</td>
<td>Challenge, interesting material.</td>
</tr>
<tr>
<td></td>
<td>Extrinsic</td>
<td>Compensation or Proof of capability</td>
<td>Passing course, feedback</td>
</tr>
<tr>
<td>Social</td>
<td>Extrinsic</td>
<td>Having a good time</td>
<td>Facilities for sport and social activities.</td>
</tr>
</tbody>
</table>

A further study at the Open University (O.U.) (Taylor et al., 1981) found all these categories, with the exception of the Social orientation, among students taking the Social Science Foundation Course, Making Sense of Society.

The Complexity of Educational Orientations

Although we have separated out these orientations into categories and sub-categories they are idealized extremes and not descriptions of the types of students in the sample. In fact, any particular student's orientation will often be a complex mix of two or more of these orientational types. For example, many of the Open University students could clearly be seen to be mainly personally orientated but many of these had evidence of other vocational or academic orientations. To illustrate these joint orientations and the complexity of individual students' orientations, here is an example of a student who while primarily personally orientated, shows aspects of vocational orientation.

Well I hope to stop myself from turning into a complete cabbage — and to widen my views on life and the problems — eventually I hope to get a degree and possibly that will help me to get a job one day which I would like to do. But I think that that is very much a secondary consideration.

This quote shows clearly the personal aims and the secondary vocational aims of this student. We can expect that both these aims will affect the student's approach to the course and a detailed description of the orientation, including the relative strength of these aims should help us to understand the particular student's approaches to studying.

Similarly, where a student shows signs of having both personal and academic orientations, both aspects of the orientations will affect the student's relationship with the course. A student who is personally orientated but also academically orientated might be interested in personal development, but more in terms of the ideas to be explored in the subject than in becoming more capable in a general way.

I'm interested in man, in society and I realize how narrow a view I have about the way society works, about what other people feel and do and why they do these things. I got a bit from doing the A-level last year and I hope that I get an awful lot more from doing the Social Science Foundation Course this year.

In this quote one cannot distinguish clearly between the two orientations — they seem to mingle together as one orientation. However, a description of the 'ideal' categories of orientation helps to unravel a student's particular orientation and see the implications for approaches to studying. Further examples from students' interview transcripts help to elaborate these idealized categories of educational orientation.

**Academic orientation — intrinsic**

(Intellectual interest)

This category of orientation is characterized by students who are primarily interested in studying a particular subject 'for its own sake'. They are intellectually interested in the subject and are interested to study at a higher level. Most students with this orientation already had some experience of the subject before coming to university and so tended to be 'syllabus free'. They want to follow up aspects of the subject beyond the defined syllabus. One student at Surrey University had taken this to an extreme.
emerged from the differing experiences of institutional and personal contexts of learning. These sub-cultures are not describing types of student, as a student may well participate in several sub-cultures, and the actual sub-cultures that exist may well combine aspects of more than one type. They described the typology as "a heuristic device for getting at the processes by which social structures shape student styles of life in different kinds of colleges". The four main sub-cultures were labelled collegiate, vocational, campus fun — some gesture is made to studying, but only in terms of the minimum requirements to gain a degree. The vocational culture is equivalent to sport and social activities. The academic culture, present on every campus, is the sub-culture of serious intellectual effort applied to the world of knowledge and ideas. Students pursue knowledge and understanding — their symbols of the institution are the library, the seminar group and teaching staff with the same inclinations. The non-conformist culture differs from other cultures in its detachment from style a somewhat aggressive non-conformism and critical detachment from the college. Clark and Trow summarized this typology of students as involved with ideas — and the extent to which students identify with the college or institution.

In our terms Clark and Trow were showing how distinctive sub-cultures emerged from the differing experiences of institutional and personal contexts of learning.

Clark and Trow suggested four main analytical categories to describe these sub-cultures. They are not describing types of student, as a student may well participate in several sub-cultures, and the actual sub-cultures that exist may well combine aspects of more than one type. They described the typology as "a heuristic device for getting at the processes by which social structures shape student styles of life in different kinds of colleges". The four main sub-cultures were labelled collegiate, vocational, academic and non-conformist.

The collegiate culture is the stereotype of college life, a world of sport and campus fun — some gesture is made to studying, but only in terms of the minimum requirements to gain a degree. The vocational culture is focused on getting a qualification and gaining employment; here the engagement in ideas and scholarship may be seen as a distraction, equivalent to sport and social activities. The academic culture, present on every campus, is the sub-culture of serious intellectual effort applied to the world of knowledge and ideas. Students pursue knowledge and understanding — their symbols of the institution are the library, the seminar group and teaching staff with the same inclinations. The non-conformist culture differs from other cultures in its detachment from style a somewhat aggressive non-conformism and critical detachment from the college. Clark and Trow summarized this typology of sub-cultures in terms of two main dimensions — the degree to which students are involved with ideas — and the extent to which students identify with the college or institution.

<table>
<thead>
<tr>
<th>Identification with College</th>
<th>Involvement with Ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td>much</td>
<td>much</td>
</tr>
<tr>
<td></td>
<td>ACADEMIC</td>
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<tr>
<td></td>
<td>COLLEGIATE</td>
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<tr>
<td>little</td>
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<td></td>
<td>NONCONFORMIST</td>
</tr>
<tr>
<td></td>
<td>VOCATIONAL</td>
</tr>
</tbody>
</table>

Types of Orientations of Four Most Distinguishable Student Subcultures. (from Clark and Trow, 1966).

They use the term 'orientations' to mean the "defining elements of student sub-cultures in which they appear as shared notions of what constitutes right attitude and action towards the range of issues and experiences confronted in college". This general use of orientation is rather different from what has been defined in this chapter as a students' educational orientation; the aims, values and purposes for study — the personal context of study.

(ii) The personal context

How do students come to be taking a particular course? What are their aims and purposes in undertaking a course of study? With adult students, questions are particularly important because of the voluntary nature of the education they are engaged in. The concept of motivation has often been used to explain variations in students' capabilities for studying. However, there are problems with the use of this concept. Firstly, as it has been used in so many different ways, there is a lack of precision with regard to its meaning (Peters, 1958; Parlett, 1980). Secondly, it has been used as an explanation of behaviour, which may not take account of the conscious control of learners over how and what they study. Where motivation is seen as a drive, students are viewed as essentially passive, being driven by factors out of their control. Similarly, some goal direction theories tend to view students as responding to stimuli, rather than actively constructing their own behaviour patterns. The focii of traditional studies are the motivational factors which push and pull students towards particular goals: e.g. to pass an examination. However, such theories of motivation are based on theories derived from other contexts and imposed on student learning without consideration of their validity. More recent work on motivation, in relation to study processes (e.g. Biggs, 1978 and Chapter 9), has developed constructs more closely associated with the study situation and students' intentions. The description of personal context for study or educational orientation further develops this work, to provide a more holistic description of students' motives and purposes.

Educational orientation is defined by "all those attitudes and aims which express the student's individual relationship with a course of study and the university"; (Taylor et al., 1981). Educational orientation is the collection of purposes which form the personal context for the individual student's learning. Orientation assumes that students have an active relationship with their study. From the point of view of educational orientation, success and failure is judged in terms of the extent of students' fulfilment of their aims. Orientation does not assume any state or trait belonging to the student; it is a quality of the relationship between the student and the course rather than a quality inherent in the student and so may change over time. The analysis of educational orientation therefore does not set out to type students, rather it sets out to identify and describe types of orientation and to show the implications of these different types of orientation for the approach a student takes to learning.
I've learnt about the different disciplines and about the way the society's changed over the centuries since the industrial revolution and how this has changed everything.

... well basically an insight into methods of looking at different things. I mean, it was so broad, it has set things in perspective and so it's a good introduction to different facets of the subject. The way different disciplines will look at something, different attitudes of the sociologist and the more specific examination of an individual that a psychologist would make.

I've learnt, I think this business of being sceptical is quite a big thing. Questioning things a lot more. I think probably to live in the future, if I don't carry on with Social Sciences that's probably the most valuable thing that I feel that I personally got from the course. When I read a newspaper or watch television or something I find that I'm a lot more questioning than I used to be.

I think the biggest thing is the confidence — that perhaps I'm not as stupid as I thought I was.

I suppose I'd have missed a lot of what I've learnt in relation to my work about the psychology of work and that kind of thing and perhaps thinking about things a bit deeper. Whereas I was inclined to take decisions fairly quickly on certain things, now I do have certain experience having studied a bit of psychology and sociology in places and I do try and perhaps see how things are going to interrelate and affect people — spend a bit more time on it and be a bit more thoughtful than I was before.

I think it's given me different ideas as to how I'll approach my course next year. I will take notes which I didn't do this year — I didn't know really what to do and what not to do this year. So I'll do quite a lot of things differently. I think I'll just approach the whole learning bit, if you like, differently next time. And what else have I learnt? — I suppose on a personal level I've learnt to use my time effectively.

Besides gaining an understanding of the course content, which is the teacher's or course team's main aim, students mention the personal and affective aspects of study — gaining in confidence; changing in attitudes; and increasing critical awareness and scepticism. As teachers and researchers, we may be too ready to accept students' assessment grades and their understanding of the course content as the sole measure of success. However, it is clear from these quotations that, from the students' point of view, other aspects can be equally important.

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Describing the world of the learner must take account of both institutional and personal contexts for study. What are the formal demands of the assessment system — what sort of understandings are valued and rewarded by the formal curriculum? What are students' aims and purposes in engaging in a course of study?
CHAPTER TEN
The World of the Learner
GRAHAM GIBBS,* ALISTAIR MORGAN AND ELIZABETH TAYLOR
Oxford Polytechnic* and The Open University

Introduction

Previous chapters have progressively widened the focus of research on student learning. Starting from naturalistic experiments on reading, we have looked subsequently, first at other tasks and then at the effects on learning of the educational context—the perceived demands which so strongly influence students' approaches to learning and affect their levels of understanding.

The previous chapter described aspects of context defined in terms of students' perceptions of teaching, course work and assessments—what can be called the institutional context. In this chapter an even broader focus is used to take account of the personal context from which the student views studying in terms of personal goals and values, as well as the demands of courses and lectures. From this standpoint it becomes possible to examine approaches and outcomes in terms of the broadest possible picture of a student's experiences of learning.

This total 'world view' of a student's experiences of learning can be represented as a series of interrelated concepts which describe learning at increasing levels of generality. At the most general level there is the personal context for studying, that is a student's aims, values and purposes for study. We shall call this a student's educational orientation.

The experience of learning also depends on the institutional context—the way in which a particular educational institution operates, with its norms, values and traditions, and its particular procedures for teaching and assessment. And the institutional context, as we have seen affects the lower level concepts describing the students' experiences of specific learning activities—learning approaches and outcomes.

In this chapter, we shall build up a broad picture of the world of the learner by exploring these various levels of description through case studies of particular students.

To highlight students' overall experience of learning or their perceptions of gains from study, consider the following replies to the question—"What have you learnt from the course?" (which was asked of students who had just completed a foundation course in Social Science with the Open University.) The quotations from six students show that it is possible to gain very many different kinds of things from the same course. (See Taylor et al., 1982 for further details.)
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the students' perspectives, the efforts of educational technologists to improve learning will be focused towards the crucial dimensions which influence what students learn.

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prove to be of little value as this apprehension and lack of confidence prevent any method from being seriously attempted and evaluated.

Again this student clearly holds a conception of learning related to learning the facts and as a result is experiencing problems in studying.

Another variation we identified within a surface-level approach was how students can focus on the details of the correspondence text. This attention to the detail or the 'sign' was in terms of whether the text agreed or disagreed with the student's existing beliefs and understandings. This attention to the details in the text in terms of right or wrong was linked to an absolutist conception of learning. 'The people who write these (texts), they are a lot cleverer than I am, a lot more intelligent but I don't think they have got a monopoly on truth . . . who says why it is right—nobody—except who has been writing the unit.'

This critical attention to details has similarities to Marton and Säljö (1979) description of 'horizontalization' where the student focuses on all the text at the same level. Although the text consists of broad principles and specific details, it is seen at one level of information to be evaluated as either right or wrong, in contrast to a 'vertical perception' of a text, where a student sees the structure of an argument and can differentiate between specific details and broader principles and theories.

Surface-level approaches to study all seem to be linked to Säljö's conceptions 1, 2 and 3, described previously where learning involves a passive accumulation of knowledge without transformation by the learner. Thus developing students' awareness of what is required in learning seems to be very important if we are to encourage them to take a deep-level approach to their studies.

Conclusions
We have described variations in approach to study for students taking the social science foundation course in their first year of OU study.

As approach to study has a direct influence on learning outcomes—ie, what students learn—helping students towards a deep-level approach seems to be of critical importance for educational technologists. In designing distance teaching materials in the OU, educational technologists pay particular attention to designing activities, self-assessment questions, etc, so as to encourage students to engage in a deep-level or active approach to study. However, these attempts by themselves seem unlikely to succeed if they omit to consider the development of the student as a learner. So improving learning consists of helping students develop their awareness of what learning consists of—ie, change their conceptions of learning. Assisting this development of the student is of considerable importance to the OU as we take inexperienced learners into our foundation courses. Our interview data show how some students can see that learning the facts and memorization is not what is required of study, but seem unable to make the transition to other approaches. Students' approaches to study are constrained by the conception of learning they hold. Descriptions of the different ways students approach study provide a sound basis for a dialogue with students, face to face, or at a distance, to increase their awareness of how they study. By developing models of the learner which are firmly based in the realities of learning as viewed from
conceptions 4 and 5 is that knowledge is actively constructed by the learner. The distinction between conceptions 4 and 5 is that learning is not only a cognitive activity but can involve the learner personally and lead to interpretations of the learner’s reality. The differences between Säljö’s conceptions 4 and 5 seem to parallel the distinctions we have identified between students adopting a deep-level approach.

Surface-level approach
Marton and Säljö (1976) describe a surface-level approach as related to the memorization of details with the emphasis on assimilating knowledge and information unchanged. The analysis of our interview transcripts revealed students who described a surface-approach in a similar way to that defined by Marton and Säljö. However, we have identified some very interesting variations within a surface-level approach. These variations seem particularly important in relation to helping students develop as learners. Rather than seeing a surface-approach as linked to a lack of reflection on learning, we identified an approach where students are trying different ways of studying to achieve the same goal—ie, to reproduce information. Again, note-taking provides insights into how students are studying.

'I have been writing what I consider to be quite a lot of notes—this time the only notes I have really taken are to do with the actual assignment, the written assignment. I have taken some notes on that but the rest I have been putting on tape, which I am trying to learn. . . . I think it comes over better, you know, getting it on an oral basis rather than reading it all the way through because a lot of these notes were just a matter of sheer copying from the unit. In the first three blocks, I got a fail in each of them, I wrote dozens and dozens of pages of notes . . . I don't know quite how to explain it—you start something and you think I've got to learn all that lot. But on the tape it doesn't seem to be so much.'

This student appears to view learning as memorization and is attempting to record information on audio-tape as a means to reproducing the material, after experiencing difficulty in writing notes. Different methods of learning are being attempted, but the student appears to be 'locked into' a surface-approach as a consequence of a particular conception of learning.

In contrast to the previous example, where there was some flexibility within a surface approach, we found other cases where students were unclear of the demands required of them in study in the OU and coping with the large amount of information transmitted by the distance-learning system, and lacked the flexibility to try out any method of studying. For example:

'I just think that I harped back to school days too much and I am surprised that there aren't the facts there presented for me and—I don't know—I do find some of the course text—I read it through and I think, oh I don't know what on earth I have read there, I read it through page after page.'

'I know I read fast, but I was reading extra slowly to try and take it in. I just wonder if I've got out of the habit of reading and taking things in. Because I read a tremendous amount . . . It is for entertainment more than anything. And I do tend to skim, I suppose: I wonder if I am doing that . . . But I can't slow my reading down and that coupled with the total inability to make notes . . .'

The learner appears to be totally engrossed with himself with a fear of failure or apprehension about his ability to study. Attempts to engage in the subject material
Other students described how attempting to write the essay helped them to crystallize their thoughts and relate ideas together.

'I find the TMAs actually crystallize ideas a lot you know. I read a block and I end up with lots of what are essentially jumbled thoughts, but you don't make sense but there is no actual structure to them. You can see that one person says this and one person says that, and how those different ideas relate to each other in my mind comes clear when I start writing about it. I try and construct a pattern I suppose and then fit different authors' ideas into it and agree or disagree depending on the point I am trying to make.'

These descriptions of students' learning where there is a personal involvement seem to parallel Rogers' (1969) concept of significant learning. It 'has a quality of personal involvement—the whole person in both his feeling and cognitive aspects being in the learning event'.

In contrast to the above descriptions, some students we interviewed can be seen to be taking a deep approach but in a somewhat external, impersonal way or purely in a cognitive manner. This way of studying was sometimes associated with a very 'strategic' approach, which may be an important aspect of OU study, since students study part-time at a distance and have to adapt to considerable demands of the OU system in terms of regular pacing of the correspondence texts and the assessment tasks. This type of approach was successful in terms of assessment requirements but students seemed to realize that learning could be a more personal activity in other contexts.

For example: 'I think on some of the essay questions you have to go deeper and beyond the definitions in the block and perhaps try and read a bit and become more analytical and critical but this involves time, which is a precious commodity. I tend to concentrate on the middle course of getting what's in the block.'

This student's description of taking notes on index cards indicated essentially a deep-approach of finding the main points in the course material but using the fastest most strategic method.

'I have a quick look and see how long I am going to take on it and then I just read straight through it and use the felt tip... I ring various theories as I go through, I possibly go through it and I make a few notes on small cards on what the various theories are... What I tend to put down is the main points in each block, what the answers are in the main points of each block. To be quite fair about the way I am doing it, I suppose I am doing the minimal study to sort of achieve the end result and so from that point of view, my need is to have something which is more succinctly encapsulated and I use the cards in that fashion.'

These differences within a deep approach can be seen to be related to different conceptions of learning identified by Säljö (1979a; 1979b). Säljö studied people's conceptions of learning by asking them, 'What do you actually mean by learning?' The answers to the question revealed five different conceptions of learning. Conceptions 1, 2 and 3 are concerned with learning as an accumulation of information, the memorization of facts, and the learning of set procedures to be used in practice. In contrast, Säljö's conceptions 4 and 5 describe learning as the 'abstraction of meaning' and learning as an 'interpretive process aimed at the understanding of reality', respectively.

In the case of conceptions 1, 2 and 3, learning is seen as a passive activity with the emphasis on reproducing knowledge and information, whereas the essence of
Glaser and Strauss (1967/8) describe the advantages of this approach:

'The consequence of the traditional approach is often a forcing of data, as well as a neglect of relevant concepts and hypotheses that may emerge. Our approach, allowing substantive concepts and hypotheses to emerge, first on their own, enables the analyst to ascertain which, if any, existing formal theory may help him generate his substantive theories.'

Obviously there is an interaction between a researcher's prior knowledge and experience and what is seen inductively as a 'significant observation' or an 'interesting piece of data'.

Wilson (1977) makes this point very clearly:

'No one, of course, enters a situation a true tabula rasa. Language is itself a limiting factor which provides one set of conceptual tools and screens out others. Similarly, previous experiences influence the scientist's observation and thought. In fact, traditional empirical scientific methods have sought to extrapolate along these lines by asking the researcher to be most explicit and rigorous in the formulation of the perspective underlying the research. There is room in the realms of research, however, for other more inductive approaches where the role of the preformed hypothesis and circumscribed data gathering techniques are reduced to a minimum.

Those who work within the anthropological tradition cultivate the skill of suspending (the phenomenologists call it "bracketing") their preconceptions. They study prior research and theory as much as the traditional researcher, but they then purposely suspend this knowledge until their experience with the research setting suggests its relevance.'

Approaches to studying of Open University students

We have analysed the interview transcripts as previously described so as to uncover significant phenomena on how students study. By identifying significant points in students' interviews and relating them to existing theory, there is a dynamic relationship in building and developing theoretical constructs as described by Glaser and Strauss (1967/8). We have identified the major distinction of deep-level and surface-level approaches to study, but these concepts require developing so as to describe the complexity of learning in the Open University context.

Students' descriptions of note-taking and completing the essay assignment provide powerful insights into the learner's world. These two aspects of study, even more so than reading the correspondence text are crucial for understanding approach, as they serve as important recall devices for how students studied.

Deep-level approach

A deep-level approach as characterized by Marton and Säljö (1976) is concerned with relating ideas together, finding the main points in a text and constructing meaning from learning materials. When people 'really understand material' it seems that the process requires the learner to engage in a destructuring of the knowledge or subject area in question, followed by a restructuring so that material is related to a student's existing construct system. Some of the students we interviewed described this restructuring in personal terms—ie, in relation to their lives and themselves as individuals. The following quotation illustrates this: 'I read the thing pretty quickly and then go through it again and extract things which seem relevant . . . if I can see that they have an application or are relevant to life as I see it, you know, they strike a chord perhaps and I take note.'
technologists for improving student learning. This direct link between approach and outcome has also been identified by Svensson (1977) with students undertaking their normal studies.

An important feature of approach to studying is that these distinctions have been identified by using qualitative research methodologies and describing learning from the learner's perspective. Marton and Svensson (1979) have labelled this a second-order research perspective. They have differentiated between two different perspectives for research in student learning. The first-order perspective, represented by traditional evaluation and psychometrics, is observational and describes learning 'from the outside' whereas the second-order perspective is experiential and describes learning from the learner's perspective or 'from the inside'. (For a review of the research of Ference Marton and the Gothenburg group, see Gibbs, Morgan and Taylor, in press.)

Research in student learning in the Open University
Although there has been a considerable amount of evaluation research carried out in the Open University, the majority of studies have adopted quantitative methodologies using closed-ended questionnaires. Learning has been described from the teacher's or evaluator's perspective and not from the learner's perspective (see Morgan, Gibbs and Taylor, 1980). In the study described here, the aim is to understand how students are approaching studying the Open University's learning materials, by means of open-ended in-depth interviews.

Methodology
We have followed a group of 29 students through their first year of university study on the social science foundation course by interviewing them on three occasions (before, during and after the course) to investigate various aspects of their learning experiences. One set of interviews was designed to investigate how students had tackled studying Blocks 4 and 5 of the course, entitled 'Production and Allocation' and 'Work'. (Drop-out from the course eventually reduced the number of students to 24.)

Students were interviewed immediately after they had completed their essay assignment, so that details of studying at this critical point would still be clear in their minds. The interviews covered all aspects of how students had used the learning materials and completed the essay assignment. For example, we asked questions such as 'What did you do when you first started work on this Block?', 'How did you go about studying the Block?', 'Can you explain these notes you have made?', followed by non-directive probing questions, for example, 'Can you explain that?', 'Can you say anything more about that?', etc, to ensure that the details of a student's study strategy had been properly understood. The interviews were tape-recorded and then transcribed in full.

The analysis of the interview transcripts was carried out by carefully reading through them to identify what seemed to be the 'significant points' or the 'essences' of what students were saying in the interviews. The analysis was not derived from pre-specified hypotheses, as is usual in the hypothetico-deductive approach to research, but is essentially inductive—'uncovering significant phenomena' or as
Variations in Students’ Approaches to Studying

Alistair Morgan, Elizabeth Taylor and Graham Gibbs

Alistair Morgan and Elizabeth Taylor are in the Study Methods Group at the Institute of Educational Technology, Open University, Milton Keynes MK7 6AA, and Graham Gibbs lectures in the Educational Methods Unit at Oxford Polytechnic.

Introduction

Phenomenological approaches to research in student learning can provide new insights into learning which are unlikely to be uncovered by traditional approaches to research and evaluation.

There is a considerable body of literature on research and evaluation in education both in Europe and the USA which attempts to describe student learning in natural settings. For example, Entwistle and Hounsell (1979) identified a trend in research in student learning towards qualitative methodologies so as to increase the relevance of the findings for practising teachers. Similarly, Wilson (1977) and Filstead (1979) argue for an ethnographic or qualitative approach to research and evaluation in education so that the complexity of the student and his or her ability to reflect upon experience are recognized. This is in contrast to traditional evaluation and mechanistic models of learning which ignore the conscious control of the learners over their strategies and approaches to studying.

A crucial aspect of understanding how students handle learning materials is their approach to study, identified by Marton and Säljö (1976).

In this paper we shall describe a study to investigate approach to study in the Open University and the implications for improving student learning.

Approaches to studying

Marton and Säljö (1976) have investigated how students approach particular learning tasks and how approach is related to learning outcomes. In one study, students were asked to study an article about educational reform in Sweden. They were then asked in individual interviews to summarize the article in a few sentences and then to reflect on how they had gone about reading the article. Analysis of the interview transcripts revealed two very different approaches to study. One group of students described their approach in the following ways: ‘Well, I just concentrated on trying to remember as much as possible’ and ‘I sort of tried to memorize everything I’ve read—not everything, but more or less’.

In contrast, another group of students described their approach as follows: ‘I tried to look for the principal ideas’; ‘What was the point of the article?’ and ‘I thought about how the author built up the whole thing’.

These qualitatively different approaches to studying were termed ‘surface-level’ and ‘deep-level’, respectively. They were directly related to what students had understood from the article. None of the students who described their approach in terms categorized as a surface-level approach completely understood the author’s argument. In contrast, all of the students who took a deep-level approach gained a good understanding of the article.

The relationship between approach to study and the quality of learning outcomes, i.e., what students actually understand, seems of crucial importance for educational
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References


Whether or not students used ITQs might be seen to depend on their conception of the reading task and of learning in general. Whether or not those who used the ITQs found them helpful might be seen to depend on the students' goals and whether using the ITQ helped them to achieve these goals. Whether or not the insertion of ITQs influenced learning outcomes would be examined by looking at exactly what had been learned. It might be found that because the ITQs influenced students' approach to reading, in that a surface approach was encouraged, this therefore influenced the learning outcome and that incomplete understanding resulted from this surface approach. This level of understanding might be perfectly adequate for the quantitatively-based assessment system, however. So students who were primarily concerned to pass the course would find such ITQs helpful. There might also be students whose conception of learning was such that even though they were not primarily concerned to pass the course they were unable to recognise that the ITQs were orientating them towards an approach which resulted in an incomplete understanding. These students might consider the ITQs very helpful even though they resulted in qualitatively poorer learning outcomes!

It hardly needs pointing out that none of this could be seen from a 1st order perspective. Until we understand learning, as students experience it, we will be in a very poor position to give advice on the use of ITQs however much data, collected from a 1st order perspective, we have.

In order to improve learning, we have to find out the different ways in which the students think about the content, on one hand, and to raise their consciousness of the way they set about the learning task, on the other (Ference Marton, 1979).

Notes

1 This article is a revised version of an Open University internal paper, Study Methods Group Report no. 2 (Gibbs, Morgan and Taylor, 1980).

2 We would like to make an additional distinction here between what Marton is proposing and the currently popular emphasis on “knowledge structuring”. There has been something of a consensus that understanding the way knowledge in a particular area is structured is a vital prerequisite for teaching. There has also sometimes been an implicit assumption that such a knowledge is sufficient – that the way to teach a subject somehow flows directly from such knowledge. We would like to point out that studies, such as the economics study reported above, demonstrate that without an understanding of the way students think about the subject area such idealised knowledge structures may not be very useful.
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Chapter 2

Research into Student Learning

Graham Gibbs

At a CVCP/SRHE research seminar on teaching and learning, Noel Entwistle said: 'much of the work on innovations in teaching and learning has a rather weak research base' (Entwistle, 1993). In the same week the National Commission on Education reported and recommended that more research into effective teaching and learning practices should be undertaken and that some kind of national unit be set up to undertake and coordinate this research. We need to ask ourselves whether more research is really necessary and if so, of what kind and undertaken by whom.

We already know a good deal. The evidence shown in Table 2.1 comes from a very large-scale piece of educational research. What might Condition C be that it results in such a dramatic improvement in student performance?

In fact the 'experiment' involved the whole of higher education in the UK over 21 years and the three 'conditions' are the years 1969, 1979 and 1990 (MacFarlane, 1992). The point about this evidence is that few believe that standards have actually improved and it raises far more questions than it answers. It would be helpful to have some evidence about some of these questions. For example haven't the larger classes which have mushroomed since 1979 led to poorer performance, not better performance? Well actually they have, and we have clear evidence about this. For example in a study of the relationship between module enrolment and student grade on 1,500 modules involving 37,000 students over five years, students in large classes were found to have a significantly lower chance of getting good grades (see Table 2.2).

Table 2.1  Student performance under three conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of students gaining 2:1s or 2:2s</td>
<td>29%</td>
<td>32%</td>
<td>49%</td>
</tr>
</tbody>
</table>
This is extremely clear evidence and if it had been taken seriously it would have led to a reconsideration of the strategies being adopted for coping with increased student numbers. Unfortunately the institution involved ignored the evidence (as did the rest of higher education) and more than trebled the number of modules with enrolments of over 70 over the next five years. And we now have preliminary evidence that the relationship between class size and performance is stronger than it was ten years ago.

We also have good research evidence about the effects of class size at a micro-level: on student and teacher behaviour in seminars, for example. We know that the proportion of teacher talk increases with class size and that as class size increases, students talk less and their questions and answers get shorter and the cognitive level of their contributions declines so that in groups of 16 and over the majority of student contributions are at the lowest (knowledge) level (Mahler et al., 1986). This has not stopped seminar sizes increasing to 16 and beyond in most institutions.

At the same research seminar where Entwistle claimed that innovation had a poor research base, Alistair MacFarlane (author of the MacFarlane Report, 1993) said that it was inevitable that students would have to pay their own fees. We have clear evidence that this, too, would be highly damaging. A study in one institution found that even without having to pay fees students accumulated debt at a rate of £1,350 a year if they didn't work. As a result, 93 per cent of students undertook part-time paid work at some time during their studies. Failure on a module was found to be three times higher for students who undertook part-time work during that module and on average students undertaking part-time work gained significantly lower marks. This led to an estimated 250 students a year getting a lower class of degree than they would have otherwise have and 1,640 modules a year being retaken to replace failures due to part-time work (Paton-Saltzberg and Lindsay, 1993).

What Noel Entwistle didn't say is that even when we have the evidence we ignore it. And despite the effects of large classes on performance, the effects of large seminars on the quality of student involvement and the effects of part-time work on student failure, more students than ever before are gaining good degrees. Now that really is worth researching.

Table 2.2 Module enrolment and student grades 1981-5
(Lindsay and Paton-Saltzberg, 1987)

<table>
<thead>
<tr>
<th>Module enrolment</th>
<th>% of students gaining grades of A or B+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-20</td>
<td>40%</td>
</tr>
<tr>
<td>&gt;70</td>
<td>28%</td>
</tr>
</tbody>
</table>

Clear quantitative evidence just doesn't seem to carry the weight that it should and academics can be extraordinarily irrational about evidence once outside their own discipline area, especially educational evidence. For example, what conclusion might one reasonably draw from the summary of 23 research studies comparing teaching method X with a range of alternatives, shown in Table 2.3? In these studies educational benefit was measured by students' ability to analyse cases, solve problems, synthesize evidence and so on.

Method X is, of course, lecturing – the most common teaching method in higher education. This evidence has been available for over 20 years but has had little impact on the prevalence of lecturing. When confronted with evidence of this kind, lecturers' most common reaction is to find some objection, either concerning methodology or differences in context, which are argued to reduce the relevance of the findings to zero. If someone doesn't want to believe that lecturing is a relatively poor teaching method then no amount of evidence will make any difference.

In this context calls for more research seem to miss the point. There is a huge body of research evidence out there but it is either not known about or ignored. It is hard to imagine what further research on lecturing, for example, could make any difference to the business of changing compulsive lecturers' minds. Quantitative studies which compare method A with method B provide imaginative academics with endless fun thinking up alternative explanations and additional questions which need researching before any clear conclusion can be drawn. When I hear someone ask me for 'hard evidence' to back up my suggestions about practice, I can predict the course the interaction will take, because the only kind of evidence which this kind of person claims would convince them also offers them unlimited opportunities for evasion.

An alternative approach to using individual pieces of quantitative research evidence is to undertake large-scale reviews and only present the broad conclusions which can be drawn from these reviews. An excellent example is the 'Seven principles for good practice in undergraduate education' published by the Ford Foundation (Chickering and Gamson, 1987):

Table 2.3 Summary of 23 research studies comparing method X with alternatives (from Bligh, 1972)

<table>
<thead>
<tr>
<th>Method X</th>
<th>Worse</th>
<th>No Difference</th>
<th>Method X Better</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 studies</td>
<td>5 studies</td>
<td>0 studies</td>
<td></td>
</tr>
</tbody>
</table>
Research Teaching and Learning in HE

1. Good practice encourages student-faculty contact
2. Good practice encourages cooperation among students
3. Good practice encourages active learning
4. Good practice gives prompt feedback
5. Good practice emphasizes time on task
6. Good practice communicates high expectations
7. Good practice respects diverse talents and ways of learning.

This kind list has face validity and is backed up by extensive literature and comprehensive analysis. In the USA these principles have had a major impact and institutions are taking them seriously in reviewing and improving courses. A conference is devoted to reporting action implementing these principles and already a book has been written containing examples of implementing these principles (Chickering and Gamson, 1991).

Also in the USA the Department of Education funds (to the tune of $6 million) a unit at Penn State University (The National Center on Post Secondary Teaching, Learning and Assessment) to collate research findings and disseminate them in accessible forms. Their job is not to undertake research there is already plenty of that - but to make sense of it and communicate it in appropriate ways. They do this in short summaries and in 'The Teaching Professor' - an A4 newsletter with 20,000 subscribers.

In her workshop at the conference, Liz Beaty described powerful ideas lecturers ought to know about, that at conferences on student learning in the late 1970s a small group of researchers used to talk to each other, and to no one else, and had no impact on practice. I was one of those researchers and very depressing it all was! In contrast, at Warwick University in September 1993, 170 people came to a research symposium on Improving Student Learning and over 75 per cent of them were lecturers. Most of the papers were by lecturers who were using research frameworks and research tools to make sense of their own teaching and their own courses. This represents a sea change in attitudes and behaviour, which is, in this country at least, in part due to the CNAA-funded Improving Student Learning project in which lecturers were supported by funds and expertise to study changes in their courses designed to increase the extent to which students took a deep approach in their learning. Reported in leaflets to 30,000 people and through two conferences, a book (Gibbs, 1992) and more than 30 workshops, it made use of a well-articulated framework based on existing research and applied it as best it could. The remainder of this chapter summarizes that framework and the research findings and research tools associated with it, and gives a range of brief examples of the ways in which it has been applied to improve student learning as reported at the Improving Student Learning symposium.

The research framework, based originally on work in the 1970s by Marton in Sweden and Biggs in Australia, has four main elements. First, students go about learning in qualitatively different ways. The approach students take to their studies can be seen to involve either an intention to make sense (a deep approach) or an attempt to reproduce (a surface approach). Second, the outcomes of student learning are not just quantitatively different, they are also qualitatively different - students understand different kinds of things, structured in different ways, not just more or less. Third, students understand what learning itself is, what knowledge is, and what they are doing when learning, in profoundly different ways, seeming to develop over time in the sophistication of their conception of learning. Fourth, teachers understand what teaching and learning consist of, and therefore what 'good teaching' should consist of, in profoundly different ways.

The most important research tools associated with this framework are first, categories of description of approach, conception of learning and conception of teaching, allowing interview data to be categorized reliably and meaningfully. Second, the SOLO (structures of observed learning outcomes: see Biggs and Collis, 1982) taxonomy enables the easy categorization of the structural qualities of learning outcomes. Third, questionnaires (there are several, but I will refer to the ASI or Approaches to Studying Inventory) allow easy measurement of the extent to which students generally take a surface or deep approach. Fourth, questionnaires (the best and most recent being the Course Experience Questionnaire [CEQ]) allow easy measurement of students' perceptions of key features of courses which are known to influence students' approach.

The following extremely brief summary of the main research findings from within this framework provided the context for the studies which I will then go on to report:

- Students vary in their approach from context to context. Most students take a deep or surface approach depending on the context. A few students always take a surface approach. Most courses have students taking both approaches to some extent. A surface approach is very prevalent.
- A surface approach nearly always leads to poorer quality learning outcomes: little understanding and only short-term recall of infor-
Research. Teaching and Learning in HE

It also leads to poor marks and degrees when the assessment system rewards the outcomes of a deep approach. A deep approach can lead to good understanding, good long-term recall and better marks and degrees.

- Students develop in their conceptions of learning and in their conceptions of knowledge.
- Students' conceptions of good teaching are closely related to their conception of learning — those who have crude conceptions of learning believe teaching should be teacher-centred.
- Study skills can be used to implement either a surface or a deep approach. Crude conceptions of learning constrain the approach chosen. So the appropriate focus of learning-to-learn courses is on conceptions of learning, knowledge and tasks, not on techniques.
- Students tend to take a surface approach when the workload is perceived to be heavy and where the assessment system is perceived to demand, reward or tolerate memorization and in a number of other known circumstances.
- Students tend to take a deep approach where they are motivated to understand, where they are active, where they discuss what is to be understood, and where they encounter knowledge in well-structured ways.
- It is possible to change students' approach and the quality of their learning outcomes by manipulating those features of the context which the research has identified as crucial and especially by changing the assessment system.

Very crudely, the research can be summarised in three statements:

"Quantitative conceptions of learning don't get students very far"
"Quantitative conceptions of teaching don't get teachers very far"
"Quantitative conceptions of research don't get educational researchers very far".

Much research and evaluation assumes that characteristics of teaching, such as the methods used, have a direct impact on learning outcomes, as in Figure 2.1, or that student characteristics, such as their educational background or study skills, have a direct impact, as in Figure 2.2.

The model underlying current research into student learning is more complex and assumes that the most important features involve perceptions, by teacher and students, of the context. While approach is the most important factor relating to learning outcomes, there are several precursors which influence approach, as in Figure 2.3. Another feature of this more complex model is that the influences operate in both directions. For example, if a student realizes that factual outcomes from taking a surface approach are in fact sufficient to get adequate marks, this will change their perceptions of the course and the approach they will then adopt will be affected.
This research framework and these research tools were used in a wide variety of ways in the papers reported at the Warwick Improving Student Learning symposium. Six types of use are listed here and one example given of each.

1 Monitoring entire degree programmes
Gregory et al. (1993) studied 20 degree and other courses (involving nearly 1,000 students) in a large engineering school using the Course Experience Questionnaire (CEQ). They identified several degrees with low scores on most of the crucial scales (such as good teaching, appropriate workload, appropriate assessment). This led to workshops with appropriate staff and study of student workload and assessment tasks in the courses concerned in order to identify more clearly what is causing the problems. The CEQ enabled them to identify and diagnose problems in a way which conventional evaluation would not.

2 Monitoring changes in modules
Blackmore and Harries-Jenkins (1993) reported a study, involving the use of the ASI, of several very large business and accountancy modules into which open learning materials had been introduced and teaching greatly reduced. In one module, student performance had markedly declined. The ASI showed that student motivation had progressively declined, a surface approach had progressively increased and a deep approach had progressively declined. The conceptual framework helped to diagnose the causes of the problems and this had led to a range of specific changes.

3 Monitoring changes within modules
Tang (1993) studied the introduction of longer assignments alongside traditional short-answer tests in a context where short-answer tests and a surface approach were common. It was found that students took a surface approach to preparation for the short tests but a deeper approach to the longer assignments. However, inexperienced students inappropriately retained a surface approach to the longer assignments, highlighting the need to introduce new methods with an eye to how students will respond.

4 Diagnosing individual student problems
Meyer and Parsons (1993) used the ASI and other devices to identify at-risk students early on in their studies and enable early intervention to reduce the likelihood of failure. In contrast Leitch (1993) reported several attempts to identify at-risk students using an atheoretical statistical method (discriminant analysis) which had not been successful. The clear implication is that you need a theoretical framework and that purely statistical approaches are unlikely to be successful.

5 Designing curricula and assessment criteria
Jackson (1993) described the structure and operation of a degree programme in graphic information design designed around fundamental principles from student learning research, including conceptions of learning and the SOLO taxonomy, to define goals and levels of achievement which translate into project briefs and assessment criteria.

6 Rewarding excellence in teaching
Lublin and Prosser (1993) recast their institution’s evaluation and promotion mechanisms around a definition of good teaching derived from student learning research:

Good teaching is teaching which helps students to learn. It discourages the superficial approach to learning and encourages active engagement with the subject matter... it encourages in the learner motivation to learn, desire to understand, perseverance, independence, a respect for the truth and a desire to pursue learning.

The important difference between these studies and the quantitative evidence cited at the start of this chapter is that the authors were, by and large, not trying to persuade others but were exploring their own teaching using a framework which they understand and which made sense to them. They were using research and research tools to intervene, often successfully, in their own courses. This is the kind of research which gets results. This brings me to the concluding points I wish to make about...
Research into student learning, which are about who should be doing what kinds of research.

Professional researchers should concentrate on fundamental research developing theory, principles and research tools, with the aim of empowering teachers.

Teachers should be doing research on their own courses and teaching, using these theories and tools. I am not talking here about theory-free action research which tends to hold out the promise of eventually rediscovering the wheel, or student feedback collection which, without a theoretical underpinning, provides little basis for understanding what is going on.

A national body, with a specialist research team, should be set up and charged with making existing research accessible to teachers and policy makers. They should not be undertaking research themselves, but should be collating existing findings. Their main focus should be on communicative effectiveness.

Finally, educational developers should be undertaking four main roles:

- Supporting teachers' research. This might involve research training, acting as a 'free' researcher on their behalf, and helping with interpretation and writing.

- Disseminating the output of the national unit's collations of research findings.

- Undertaking institution-wide research, beyond the confines of individual courses. In universities in the USA or Australia, this role may be performed by a special institutional research outfit. In the absence of such outfits in the UK it falls on educational developers to keep their senior management informed of the key changes taking place within the institution in order to inform policy.

- Using research to direct institutional policy on issues such as course review, evaluation and promotion. Some institutions are imposing comprehensive student feedback systems which are not capable of performing the quality enhancement function they were designed for. Educational developers should be sufficiently well-informed to be able to explain the inappropriateness of such measures.

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Directions in Staff Development

Act to carry out the plan

Figure 2.1 The four stages of action research

Develop a plan of action to improve what is

Observe the effects of the action already happening

Reflect on these effects to develop an understanding as a basis for future planning and action

for getting lecturers in ten institutions to develop their understanding of the way their courses were operating at the same time as developing their practice and their courses. The project was designed to apply student learning research to the improvement of courses and student learning. Action research brings practice and theory, action and research together. It involves lecturers researching their own practice in a cyclical sequence in four stages (as shown in Figure 2.1). Originally developed by Lewin in the USA in the 1940s and applied by Stenhouse to curriculum development in schools in the UK in the 1970s, action research has become widely adopted as a model for change in courses and teaching. A number of useful guides to action research practice in higher education are now available (cf. Kemmis and McTaggart 1988; McKernan 1991; Kember and Gow 1992; Zuber-Skerritt 1992; Kember and Kelly 1993) and I will not attempt to provide an instant guide here. From the point of view of the Improving Student Learning project, action research had the following advantages.

- Those studying the innovations would be very close to what was happening; the project was not concerned with neutral objectivity.
- What was learnt would be able to be applied immediately, even though that would change the nature of the innovation. The project was not concerned with tightly controlled experimental comparisons of fixed alternatives.
- Those involved would learn and develop as teachers; the project was concerned with staff development as well as with innovation.
- Through the cyclical process of action research, more progress would be made in developing teaching and assessment methods and in developing ways of monitoring the quality of student learning.

Action research differed in important respects from what could have been mere case studies of innovations, as summarized in Table 2.3. The Improving Student Learning project used the notions of deep and surface approaches to learning as the theoretical context for action research and the Approaches to Studying Inventory and in-depth interviews as the main research tools. It supported a team of lecturers in researching their own innovations. The project demonstrated that it was possible to shift students from a surface to a deep approach and to improve the quality of learning outcomes in a variety of contexts and through a variety of innovations, and to identify under what circumstances and through what mechanisms these beneficial changes were possible. The outcomes of the project have been disseminated through two conferences in the UK, 30,000 leaflets and a book (Gibbs 1992), and have been publicized widely in the USA and in Australasia through conferences and workshops in a number of institutions. One heartening outcome of this dissemination was evident at the 1993 Improving Student Learning Symposium at Warwick (Gibbs 1994). Although the keynote papers were presented by researchers, most of the papers were by lecturers who were researching their own practice and most of the participants were lecturers, not researchers. This was a marked contrast to the kinds of event described in the second paragraph in this chapter which took place in the 1970s. The research basis, concepts and research tools were very much the same, but the use to which they were being put was very different.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Case study</th>
<th>Action research</th>
</tr>
</thead>
<tbody>
<tr>
<td>When does the research take place?</td>
<td>After the innovation is in place usually as a 'one shot' picture.</td>
<td>Throughout the process of innovation</td>
</tr>
<tr>
<td>Who does it?</td>
<td>A neutral person, usually an outsider.</td>
<td>Those involved in the innovation</td>
</tr>
<tr>
<td>Do the researchers implement the innovation?</td>
<td>No</td>
<td>Yes. Those studying the innovation are those who implement it.</td>
</tr>
<tr>
<td>When does learning take place for the innovators?</td>
<td>Afterwards</td>
<td>Throughout</td>
</tr>
<tr>
<td>Who does the learning?</td>
<td>The researcher</td>
<td>The innovators</td>
</tr>
<tr>
<td>Is the innovation fixed in advance?</td>
<td>Yes</td>
<td>No, it is modified by what is learnt through studying it, as it develops</td>
</tr>
<tr>
<td>Whose perspective does the research take?</td>
<td>That of the researcher</td>
<td>That of those involved</td>
</tr>
</tbody>
</table>

Changing Conceptions of Teaching and Learning Through Action Research

Table 2.3 Comparison of case studies, undertaken by external researchers, and action research undertaken by lecturers
Action research as a staff development process

In this section I will give brief accounts of a variety of staff development initiatives as a way of distinguishing between different kinds of action research which are driven by theory or institutional processes to a greater or lesser extent.

Pure action research and grounded theory

In Australia, Zuber-Skerritt (cf. Zuber-Skerritt 1992) has led an action research movement underpinned by the notion of grounded theory (Glaser and Strauss 1967). It emphasizes the importance of the understanding lecturers develop from their action research emerging out of the specific teaching and learning contexts they are working in, rather than being derived from existing research and theory. This contrasts with the use of existing theory and research tools applied by lecturers to their own situation, as used in the CNAA Improving Student Learning project described above. At the University of Queensland in Australia, the Departmental Excellence in University Education Project (Zuber-Skerritt 1993) used Australian Federal Government funding to support nine major action research projects. I was involved in presentations, workshops and consultation with those who were about to bid for these funds. Those involved had already been to a workshop on action research and some of their reactions were not positive. It was seen by some as ‘organized common sense’, ‘process without any content’ or ‘a time-consuming way to re-invent the wheel’. I found those involved eager to be given practical research tools and a strong research framework within which to work (such as that provided by student learning research), rather than having to start from scratch. The rationale for grounded theory is that participant observers should not be constrained in what they see by preconceptions from theory derived from different contexts. However, as we have seen, lecturers already have implicit theories of learning and teaching and these will greatly influence their perceptions. There is a real danger of action research operating only within existing implicit models and not being challenged, of lecturers collecting only the kinds of data which fit their implicit models (for example, only quantitative measures of learning outcome) and of any grounded theory being developed simply being an externalizing of implicit models. As we have seen, what students say about teaching is also rooted in their conceptions of learning and it takes more than a commitment to action research to interpret students’ responses. It takes a familiarity with the kind of research literature referred to earlier in this chapter. Lecturers need to collect the kinds of data which could challenge their unsophisticated conceptions and models of learning which can help in interpreting this data.

Innovation and evaluation

In the UK there have for some years been institutions which have funded educational development projects (Jaques 1987) and such schemes are becoming commonplace. At Oxford Polytechnic a Staff Release Scheme was modelled on Brighton Polytechnic’s similar scheme and has supported 20 or so projects a year since the early 1980s. Most of these projects involved introducing new teaching and learning methods into courses, and it has always been a requirement to plan and undertake evaluation of the innovation’s effectiveness. However, most of this evaluation has been pragmatic and theory-free and has led to little reconceptualization of the immediate practical problems, let alone a reconceptualization of the nature of teaching and learning. Such schemes are usually described as staff development programmes, but it is not the case that development of courses or teaching materials inevitably leads to staff development.

In contrast, the TRAC (Teaching, Reflection and Collaboration) project at Queensland University of Technology (QUT), supported by the same Federal funds which supported their rival’s DEUE project described above, involved extensive reflection and write-ups of projects, peer collaboration and clinical supervision in an action research approach to innovation (cf. Carr and Kemmis 1986). The reports from the projects involved in this initiative (Weeks and Scott 1992) involved references to published literature on teaching methods and research methods. This differed from the Oxford Brookes model in being more reflective and from the University of Queensland model in being less pure about grounded theory. At QUT the lecturers were making use of available theory and being encouraged to reflect upon it, supported by educational development staff. Here course development and staff development went hand-in-hand, driven by reflection and supported by research.

Beyond evaluation

In my experience it is not enough to sell to lecturers the advantages of action research or to simply explain the action research cycle. They want to know exactly how to find out what is going on in their courses. They may well have undertaken evaluations of teaching or courses in the past but usually this has been for the purpose of checking that a course or a teacher is not rated much worse than other courses or teachers or checking that enough students are reasonably satisfied. Even where evaluation has been fairly high profile there has seldom been a genuine desire to understand what is going on. As a result, few lecturers know how to do action research: they simply don’t have the research tools.

In the USA, where enormous quantities of student feedback are collected, the American Association of Higher Education (AAHE) have found
it necessary to publish a collection of techniques for what they call classroom assessment (Angelo and Cross 1993). They use the term assessment to include what we would term evaluation and also ways of ascertaining what students have learnt and understood. The AAHE have run conferences based on this theme as part of an initiative to encourage faculty to research their own practice. This initiative was triggered in part by a Carnegie Foundation Report (Boyer 1990) which was concerned with the notion of the ‘scholarship of teaching’ – an attempt to bring to the improvement of teaching some of the individualistic creativity and rigour which academics bring to the scholarship involved in their research.

There are also a number of accessible publications from the UK and Australia designed to give lecturers good ideas about how to collect useful information to follow up hunches about what might be going on in courses (cf. Gibbs et al. 1989; McKernan 1991). The importance of going beyond routine evaluation to the committed exploration of practice has been emphasized repeatedly by Ramsden (cf. Ramsden 1992) who has done more than most to explain and demonstrate the relevance of student learning research to the improvement of student learning. In the CNAA Improving Student Learning project those involved did not simply evaluate their teaching. They had all undertaken evaluations in the past. Instead they researched it, using research tools and research concepts.

Action research and initial training

At the University of Brighton the programme for new lecturers has involved the use of action learning sets (cf. McGill and Beaty 1992) in which, at regular meetings between lecturers (learning sets), participants took turns to gain the support of the set in tackling teaching problems. They undertook action learning between meetings, learning through personal experimentation and reporting on progress at subsequent meetings. However, these were not theory-free discussions and neither was the theory grounded. The programme also contained workshops which familiarized lecturers with student learning research; it is this research base which informed their action learning. At Oxford Brookes University the programme for new lecturers involves negotiated learning contracts in which lecturers engage in small scale innovation and reflection on their practice. However, there is little theoretical or research basis for this innovation and the only preceding workshops are concerned with teaching and assessment techniques rather than with the kind of theory or research tools which could enable reflection to go beyond past experience. Much initial training is evolving from skill development models towards reflective practitioner models (cf. Schön 1983), but there needs to be careful attention paid to the tools, both practical and conceptual, with which lecturers are equipped if their reflection is to lead to worthwhile development.

Conclusion

Traditional research into student learning has had little impact on practice in higher education. Part of this research helps to explain why, by showing how lecturers have different conceptions of teaching and learning and defend their conceptions from alternatives. Action research has offered a way of engaging lecturers directly in researching their own practice and this has held out the promise of lecturers developing their own conceptions. However, such changes, it is argued, are unlikely to come about through lecturers' development of grounded theory, which may simply reinforce preconceptions. Instead, action research should take advantage of developments in research and research tools and build directly on more sophisticated conceptions of teaching and learning and challenge preconceptions. Whether institutional funding for educational development projects and initial training bring about conceptual change as well as practical innovation may depend on the extent to which those involved are assisted in reflecting on their practice from a theoretical standpoint.
The future of student retention in Open and Distance Learning

Graham Gibbs
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Introduction

This paper summarises the content and outcomes of a symposium entitled ‘Student retention in Open and distance learning’ held in Cambridge, England, in May 2003. The symposium involved discussion of six papers, circulated in advance, and an additional day of discussion around a number of themes, involving a selected group of expert participants from several countries and contexts. Three of the papers derived from open learning contexts and concerned: theories of retention; student and systems features associated with poor retention, and evidence of the impact of interventions to improve retention. Three of the papers concerned retention in conventional contexts and concerned: retention in UK higher education; adult persistence in post-compulsory education, and evidence from the ‘First Year Experience’ initiatives of the past 25 years that have attempted to improve college retention in the US. It was hoped that the more extensive and mature research into retention in conventional contents would provide useful insights into retention in ODL where there is more limited theory and less empirical evidence.

A web site http://kn.open.ac.uk/workspace/index.cfm?workspacepageid=1878 was used to debate papers beforehand and to post the products of working groups afterwards. The products concerned: the roles of institutions, course designers, tutors and students in improving retention, improving retention at the programme level, improving retention by being less open, a typology of students, and conceptual frameworks for bringing together theory and evidence about retention.

This paper will draw out some of the key insights from what was a thoroughly engaging and creative symposium.

Background

Student retention has tended to be poorer in Open and distance learning than in conventional higher education contexts and improving retention has proved a relatively intractable problem. For example the Open University (UK) has repeatedly missed its targets for improved student retention despite an extensive institution-wide initiative and substantial funding for student support interventions. This apparent lack of progress must be seen in the context of entry of ever wider varieties of students with ever more varied educational backgrounds and more pressing needs, and also more fickle and discriminating consumerist attitudes to educational products and services. Is retention in ODL going to get even worse? A review of research on open and distance learning published by the American Journal of Distance Education has highlighted the lack of insights from research into student retention (Berge and Mrozowski, 2001). Most evidence about retention (Yorke, 2000) and most models of retention (Tinto, 1975, 1993) or student persistence (Choy, 2002), concern conventional adult or higher education. Attempts to understand retention in open and distance learning have a long history (Woodley and Parlett, 1983). However the only model of retention developed specifically for open and distance learning (Kember et al, 1992) has been shown empirically
not to fit the experience of Open University students (Woodley et al, 2001) and to have other weaknesses. Studies such as Shin and Kim (1999) have shown positive impacts of extra face-to-face contact on retention and at the Open University (UK) tutorial contact is associated with improved grades and retention, especially for students with weaker educational backgrounds (see Gibbs, 2003 for a summary of evidence). However it may not add much to our understanding to label such interventions as either ‘social’ or ‘academic’ integration, as Tinto and Kember do. Tinto’s model, from which most other models are derived, is based on Durkheim’s study of suicide, and seems particularly ill-suited to a context where social interaction and social involvement play such a small part. It was agreed fairly early on in the Symposium to abandon such models as the basis of insights into retention in ODL.

Empirical evidence from within the Open University about patterns of retention has focused on predicting retention from student characteristics, and on features of the organisational system that influence retention rates (cf http://intranet.open.ac.uk/pvcs/p/student-retention/indexlist.htm). There has been less conceptual development of explanations of retention that could be used to inform pedagogy, curriculum design or interventions. At the same time evidence from practitioners’ attempts to intervene to improve retention has tended to be small scale and context-dependent and it has not been easy to demonstrate positive impacts on retention or to provide empirical evidence to support practitioners’ explanations (such as those of Roberts, 1984). Studies have focussed on isolated interventions rather than on the performance of complex systems.

In contrast there is a vast literature concerned with attempts to improve student performance and retention in the first year of conventional US higher education where access is also commonly relatively open. Reviews of the many long standing ‘first year experience’ initiatives are revealing important insights into what makes a difference to retention (cf Barefoot, 2002).

**Insights from ODL contexts**

*Alan Woodley: Conceptualising student drop-out in higher education*

Alan’s paper reviewed the history of theoretical models of retention, emphasising the sociological roots in Durkheim of Tinto’s model. Tinto’s model has been adapted by Kember for ODL but the questionnaire based on this model (Kember’s Distance Student Progress inventory) has been shown not to stand up to factor analysis, and the underlying constructs and the way they interrelate have been criticised by Woodley et al (2002). Kember sees students as having personal characteristics that enable them to become socially integrated, and then some of these students will become academically integrated, depending on a range of course characteristics. The sequential nature of this model differs from that of Tinto’s, in which social and academic integration operate in parallel and longitudinally. There seems no convincing rationale for Kember’s sequential model.

Alan Woodley highlighted the lack of definition of different kinds of ‘drop-out’ that make testing any conceptual model difficult, for example:

- at what point in the sequence of student enquiry, conditional registration, submission of an assignment and final registration is a student considered to be ‘dropped in’ in the first place?
- if students are studying courses in parallel and progressing on one but not on another, are they a drop-out or a success or both at once?
- whose definitions of success are being used? Institutional and funding requirements for better retention may not align with student preferences for periods of study and non-study over an extended period. Ormond Simpson pointed out that the record for
the length of time to complete a degree at the OU UK currently stands at 23 years and that this was presumably perceived by the student concerned as a considerable achievement.

- if a student stops studying and returns, successfully, a few years later, whose problem is that, if anybody’s?

In particular there was felt to be a lack of distinction between course completion and completion of a programme of study, in the literature, and that many ODL students have no ambition to complete a programme. Comparison of progress and success of conventional and distance learning students are difficult because much of the literature in conventional contexts concerns programmes while that in ODL concerns courses. Yorke (below) argued for evidence in conventional contexts based on completion of individual courses but many ODL institutions need more data about progression to subsequent courses, or through a programme of courses.

Alison Ashby: Monitoring student progress and retention in the Open University: definition, measurement, interpretation and action

Government funding for higher education institutions in the UK is linked to student completion of at least part of a course, with some funding being dependent on course completion (defined as ‘sitting the exam’). This has had an impact both on institutional definitions of retention and on measurement of student progress.

Much of the research in the OU UK about retention has concerned the identification of student characteristics related to retention and the characteristics of courses with poorer than average retention. For example there are strong relationships between students’ educational qualifications and their progress, and strong relationships between course characteristics such as workload and student progress. The reasons students give for dropping out are remarkably similar to those given by full time students at conventional institutions (see Yorke, below). There are also changing patterns of student recruitment and of student intentions, over time, and as a consequence there has been a decline in course completion and a decline in student progression from one course to the next.

The kind of data Alison reported, from management information systems and from student surveys of courses and about retention, has made it possible to draw up a plan of action to address retention issues. For example wrong course choice is commonly cited by students as a reason for drop-out and it is possible to improve course information and to provide ‘samplers’ that make it less likely that students will make inappropriate course decisions. It has also proved possible to identify courses with above average drop-out and to identify ‘abnormal’ course features associated with this drop-out (such as course difficulty, workload, and quality of tuition) for attention and action. Management information systems have also been used to identify students ‘at risk’, and those times in the year when there is a surge in drop-out. The use of this information is one of the foci of the paper by Ormond Simpson about student support interventions (see below). One of the lessons from the US (see Betsy Barefoot, below) has been the importance of good monitoring systems so that it is possible to keep track of students and to relate progress to other variables. The strategy at the OU UK also includes supporting course teams to research in more detail the reasons underlying poorer than average retention on their course, and to monitor the impact of any changes they make.

Alison Ashby also emphasised the increasing role played in policy and funding decisions by the employer dimension, where students’ employers may be paying their fees or may have goals for learning outcomes that differ from those of either the student or the University.

Ormond Simpson: The impact on retention of interventions to support distance learning students.
A good deal of the support offered to students in ODL systems relies on students identifying themselves as in need of support and on the students then actively seeking support. However sophisticated and extensive the student support system, it is fundamentally reactive in nature. It seems clear that students who take advantage of such support are different in nature from those that do not, and they may also be already more strategic, more competent and more able to tackle study problems, than those who do not. Self-referral may only involve a small proportion of students and may leave untouched those in most need. Using the management information data reported by Alison Ashby to identify ‘at risk’ students, and crucial points during the study cycle where intervention may be able to have an impact, Ormond Simpson reported evidence about proactive interventions where the initiative is taken by the institution rather than by the student. Striking features of his report included:

- The notion that there may be a baseline level of drop-out which it is impossible to do anything about (because triggers to drop-out are beyond the control of the institution, such as illness) and that there is therefore a maximum possible increase in retention. While the impact of specific interventions may appear small (e.g. 2%), they may nevertheless represent quite a large proportion of the maximum possible impact.
- Data showing the extent to which there is much more scope for improved retention at some points in the study year than others: for example once a student has not submitted the first assignment on a course there is already relatively little you can in the rest of the course do to improve retention.
- Cost-effectiveness of proactive interventions. Simple calculations were undertaken demonstrating that, on the basis of evidence of improved retention from the evaluation of controlled studies, income could be earned from increased student retention, and costs reduced by not needing to recruit and register new students to replace those who had been lost, that greatly exceeded the costs of intervention per student. By using mathematical models of student progress it was shown to be possible to target interventions on those most likely to benefit so as to increase cost-effectiveness still further by reducing interventions for those that do not need support. Such calculations are currently being used to inform policy and funding decisions about the future shape of student support at the OU UK.

Ormond Simpson also raised issues concerning the organisation of such information-based support systems. For many interventions it may be possible to undertake them centrally, at a distance, from a 'call-centre' type system, driven by 'customer relations management' software that links information about students' characteristics and their ongoing progress (or lack of it) to records of past contacts, whoever undertook the contact. On the other hand students' own tutors might make more sensitive and appropriate use of management information and students might respond more positively to interventions from someone they know. There is considerable debate within the OU UK at present about the extent to which support is best managed through students' own (local) tutors or through impersonal (but possibly better informed and targeted) systems that could be centralised, or even offshore!

Insights from conventional contexts

*Mantz Yorke: Why students leave early in higher education*

Mantz Yorke is responsible for the largest scale study of student retention in conventional higher education in the UK (Yorke, 1999). Both Yorke's study and a more recent study by Davies and Elias (2003) found that the most common reason for drop-out was wrong course choice, with financial problems not far behind. Yorke also identified poor quality of student experience as a major issue. Recent ODL studies by John Richardson have identified quality of course experience as the major variable linked to student performance and this experience
is mediated by students' experience of their tutor. Yorke found that part time students also cited workload and financial difficulties (as did the adult students described by McGivney, see below). The similarities of Yorke's findings to ODL findings such as those cited by Alison Ashby, are striking. An exception concerns the correlation between student age and retention: negative in conventional contexts (although there are exceptions, such as at Oxford Brookes University) but positive in ODL.

Yorke identified six institutions with retention better than would be predicted from their student intake and a study of the institutions (Thomas and Yorke, 2003) identified the following key institutional characteristics:

- an institutional climate supportive of student development, that was perceived as 'friendly'
- an emphasis on support leading up to, and within, the first year of study
- an emphasis on formative assessment, rather than summative testing, during the early phase of study
- a recognition of the social dimension of learning activities.

Yorke was critical of the relevance of Tinto's model, particularly for older students for whom factors extraneous to the institution were dominant and for whom the emphasis in Tinto's model on social interaction, outside of courses, was largely irrelevant.

**Veronica McGivney: Understanding 'persistence' in adult learning**

Veronica McGivney works in the context of adult and part time education, rather than in ODL, but many of the students she studies are similar to those in ODL (and different from those often studied in the context of research into retention in conventional higher education) in that:

- they are likely to have a range of external constraints involving finances, their work and domestic commitments;
- they are likely to be living at home with a social world based at home and in work
- their learning experience and qualifications may be out of date
- they may lack confidence in their ability to learn, especially if there has been a gap since the last engagement with formal learning in educational settings.

The reasons for adult learners not completing were described as heavily dominated by personal and 'life related' factors. What is more when such students were temporarily interrupted by unforeseen circumstances, even for a short period, they often decided that it was not worth trying to continue. Male adult students are more likely to cite work and finance related issues for dropping out while female adult students are more likely to cite family commitments and childcare difficulties. The role of family and partner support was strongly emphasised and there were reports from symposium participants of small scale efforts to engage ODL students' family and friends in supporting their learning.

Correct course choice was again reported as fundamental to course completion and progression, and information about the guidance available was also important. Interestingly Higher Education was reported to be perceived as less supportive than Further Education and students sometimes found the extent of independence required (sometimes a euphemism for lack of support) came as a shock.

Finally, Veronica McGivney’s list of steps institutions can take to support adult students so as to improve retention bore a striking resemblance to that reported by both Mantz Yorke and Betty Barefoot.
Betsy Barefoot: Higher Education's revolving door: confronting the problem of student dropout in US Colleges and Universities

Betsy Barefoot is the Co-Director of the Policy Centre on the First Year in College at Brevard College, North Carolina. Access to much of US higher education has been substantially 'open' for a considerable period of time and retention in the first year of College can be lower than in some ODL contexts: typically below 50% completion of studies within five years, and in Two-Year Colleges below 50% progressing to the second year. The Policy Centre has collated evidence from 25 years of research into attempts to improve retention, and advises institutions and policy formers. Overall national progress has been limited as the problem accelerates about as fast as practice improves. There are, however, examples of improvements in some Colleges and in some courses and it is the insights from these contexts that are most useful to share. There is now strong evidence of positive impact on retention of:

- ‘first year seminars’ in parallel with taught courses, concerning how to study. Dennis Bancroft of CNED (France) reported the use, in Eire, of short, cheap, introductory ODL courses that were primarily study skills courses. What drop-out took place then happened within these short courses rather than in the longer more expensive ODL courses students went on to study.
- ‘learning communities’ that keep coherent groups of students together over several courses and build mutual support mechanisms.
- orientation programmes, and the use of Supplemental Instruction’ (SI) run by senior students.

Much of the research in the US has been about individual differences and identifying the characteristics of students who drop-out. Interestingly institutions' attrition rates are even across all levels of academic performance and even the best students can leave through boredom, lack of challenge, failure to connect with the campus social systems and financial pressures. The Symposium was told that “...contemporary American College students are not known for their product loyalty” and of the 53% who drop-out, more than half simply transfer their studying to another institution.

It was reported that many of the things that are known to worsen retention are very straightforward to address, but that few bother to take action. For example timely feedback on progress improves retention but fewer than 50% of instructors were reported to provide such feedback.

Symposium outcomes

Working groups during the Symposium presented their work and then afterwards wrote this up for the web site. This section selects key points from these reports. The first four topics address the categories of ‘persistence barriers’ outlined by Morgan and Tam (1999) but the other topics address areas less commonly tackled in the literature.

1. The role of the institution in improving retention. Peter Regan

Just as Betsy Barefoot’s work on the ‘First year Experience’ has emphasised the importance of good information systems to track student progress, Peter Regan emphasised the importance of information systems and their use in ODL. In the North East Region of the OU UK Peter Regan uses a data base connected to a management information system to identify students at risk (using a mathematical model based on
student characteristics and past student retention behaviour) and students who withdraw needlessly (whose grades mean they could still pass a course even though they have missed or failed some assignments). This information prompts pro-active interventions that have then been demonstrated to improve retention compared with control groups (for a summary see Gibbs 2003).

2. The role of course designers in improving retention. Richard Freeman

Richard Freeman identified ‘problem behaviours’ of course designers (such as using technology where no proven benefits have been identified) and also design features that are likely to improve retention (such the timing and nature of the first assignment). For example a large enrolment level 1 Science course at the OU UK experienced a marked improvement in the proportion of students who submitted their first summative assignment, when the course included an earlier, easier, formative-only assignment. Once students have submitted their first assignment they are much more likely to complete their course.

3. The role of the tutor in improving retention. Jo Tait

There is a range of evidence of the positive role tutors can play in improving retention (some of which were reported in Ormond Simpson’s paper). Mantz Yorke outlined as essential features of a traditional face-to-face system that included a ‘personal face’ that was welcoming and that appreciated and responded to individual student differences and needs from the first point of contact. It was felt that much the same issues applied to distance education and that tutors had a key role in engaging students in a learning community and building:

- a sense of participation
- personal self esteem or ‘self-efficacy’
- a sense of loyalty.

4. The role of the student in improving retention. Roger Lewis

In the US the greatest influence on the retention of College students is other students. For many distance learning students the influence comes from family and friends, then the tutor and only then from other students. In the OU UK only a quarter of students admit to contacting other students. This may be a consequence of the relative lack of use of peer learning, peer tutoring and peer assessment in distance learning compared with many face-to-face contexts. It may also be a consequence of unsophisticated students’ conceptions of the role of the tutor, based on previous educational experience.

A continuum of formality of peer support systems was identified, ranging from formal methods such as Supplemental Instruction, with its proven impact, to informal support involving ‘buddy’ systems and mentoring. In US Colleges mentoring can involve payment, training and academic credit, as well as prestige, and is much more developed than in either face-to-face or distance education in the UK. In the US there is also a growing movement involving group learning that includes group assessment, and hence interdependence of students.

5. Improving retention at the programme level. Mantz Yorke

Almost all the focus on student retention in ODL has focussed on individual courses rather than on programmes. In conventional contexts retention on programmes can be much higher than retention on individual component courses, and students may identify
themselves more with the programme than with any specific course. In the OU UK there is significant drop-out 'between' courses when there are no curriculum or tutor issues involved. Mechanisms to improve retention on programmes were identified and included:

- developing a sense of belonging;
- having good 'customer relations' outside of courses;
- providing coherent, well-structured learning experiences (rather than fragmented, start-stop experiences);
- offering substantial discounts or other incentives for registering on and completing programmes;
- having a consistent approaches to learning across courses.

Consideration of programme issues highlighted the distinction between retention (within courses), retrieval (after failure of a course) and reclamation (after a period of non-engagement.

6. What additional scope do you have to improve retention in ODL if it isn't open? Peter Knight

One of the main reasons that ODL usually has less good retention than conventional HE is that it is open. The flexibility itself causes many of the problems. Reducing openness may benefit some students and a number of issues were discussed concerning problems caused by flexibility and potential benefits of reduced flexibility, including:

- there are benefits of cohorts of students starting to study a course at the same time and progressing at the same pace, particularly in terms of developing a learning community and affording scope for peer support (see 4 above). There is also evidence that small cohorts of students taking the same sequence of courses together, as a cohort, improves retention. In this case students would voluntarily give up some of their freedom of choice and trade it off against the increased support of a coherent cohort. About 60% of US Colleges now offer 'learning community' programmes, typically enrolling 25 students together on a related cluster of courses, as a study community, to improve retention;
- there is overwhelming evidence that some students have a much lower likelihood of completing a course than others. Ormond Simpson had rank ordered students in the Cambridge Region of the OU UK using a mathematical predictive model based on past student performance, and the student at the bottom of the list had a 9% chance of completing a course. A point comes where openness of access does the student no favours. In the OU UK students are free to enrol on courses that they are totally unprepared for (though they are advised against it but often ignore the advice). Some simple rules (e.g. not being allowed to enrol on a level 2 course until a level 1 course has been completed) would have quite a marked impact on retention;
- allowing students to enrol on individual courses, rather than on programmes, can both allow students to enrol on inappropriate courses for which they are inadequately prepared and also afford much less scope for the development of individuals over extended periods of time, including the development of their study skills and ability to cope with ODL. Enrolling on individual courses also makes it much less likely that students will experience coherent curricula and planned progression – issues identified in 2 above;
- continuity of pastoral care is difficult to arrange, the more open the system. In the UK OU for example students are now unlikely to receive support between courses as their tutor's role finishes immediately before the exam and does not start for another
three months with the next course start. A considerable proportion of students are ‘lost’ during this period and do not re-register for another course.

The University of Phoenix has impressive retention figures (e.g. 65% degree completion) party through operating a system that is open in very few respects, and students are prepared to pay premium rates for the privilege. Openness in many ODL contexts may simply achieve better recruitment at the expense of retention. Ormond Simpson proposed modelling the relative impacts of less openness on recruitment and retention.

7. A timeline of opportunities for interventions to improve retention. Tony Cook

The report of this group offered the clearest practical benefit to designers of ODL systems. It identifies a series of points in students’ contact with the institution where there is scope to improve retention, accompanied by notes about the specific intervention appropriate at that time. There is research evidence about the impact of some of these interventions. For example a tutor contacting their students three weeks before their first assignment, just for a chat about progress and encouragement, improves students’ submission rates, grades and course grades. The time points identified were:

• First impression
• Period of negotiating ‘fit’ between student and institution and course (as inappropriate course choice is one of the most common reasons for drop-out)
• Registration
• Course start, and a sequence of course-related issues, especially early and regular testing for monitoring and feedback. Proactive intervention studies at the OU UK have identified positive impact of mid course contacts for ‘inappropriate withdrawals’ and of late contact before exams. It also makes a difference to students’ likelihood of course completion for those who have missed an exam if they are contacted within 24 hours about arranging an exam re-sit. The OU UK is moving towards a comprehensive proactive intervention system that ensures that targeted students are proactively contacted in timely and relevant ways at all key points
• Intention to re-register.
• End of course

8. Planning research into why students leave very early in ODL. Graham Gibbs

The greatest component of drop-out in many ODL systems (in the OU UK about 20% of all enrolments) happens before students have even engaged in their course: they register and then don’t really start. At the OU UK students can obtain a refund provided that they drop-out early enough, which explains some of what is going on. But little is known about why some students do not even get going. Retrospective studies of students’ post hoc justifications for having dropped out are not particularly convincing, and seldom succeed in obtaining data from very early drop-outs. Later drop-outs cite reasons such as workload which are unlikely to be as relevant to those who don’t even start.

i) Technical issues concerned with a study of very early drop-out include:

• identifying who the students are;
• very low questionnaire return rates (typically below 25%, even for surveys of students who engaged before they dropped out);
• the way diary or journal studies might change students’ perceptions and decisions;
• the difficulty of trusting and interpreting students’ expressed rationales for their drop-out decisions. Students tend to blame others rather than themselves (e.g. blaming over-difficult, over long, course materials rather than themselves for not being
sufficiently committed, or for not following advice that the course was too advanced given their educational background and lack of experience with ODL).

**ii) Theoretical reconceptualisation or retention in ODL:**

There was a considerable degree of consensus that the theories of retention that trace their way back to Durkheim's work on suicide (including both Tinto and Kember) were inappropriate for ODL. It was argued that 'non-progression' should be seen as a normal part of every day life rather than as a stressful life-changing event, and that the 'leaving of a cultural and social group' dimension of drop-out, emphasised by terms such as 'academic and social integration' is not nearly as prominent in ODL. The symposium therefore searched for alternative theoretical perspectives that were perceived to be more relevant. A number of areas were discussed, including debates about risk and risk-taking behaviour, the role of institutional communication, and the significance of 'role strain'. Two specific theoretical frameworks, derived from marketing, are elaborated here, partly because they come at the issue from a commercial perspective. If drop-out is not after all such a huge issue for ODL students, it certainly is for ODL institutions, whose financial futures depend on doing something more effective about it. These theories treat education as a service and treat students as customers. The following paragraphs have been provided by Nicky Bolleurs, who worked in a group within the Symposium on alternative theoretical models.

**Marketing theories that help understand student persistence**

**Service quality**

Service quality affects not only customer satisfaction, but also the reputation of the brand, and there is a wide body of research that identifies both brand reputation and customer satisfaction as important determinants of customer loyalty. In the service marketing literature the ability to manage customer expectations and the resulting implications on service quality are seen as crucial to customer loyalty. These marketing ideas are particularly relevant to higher education where failing to meet student expectations of their educational experience is seen as key to student attrition.

Parasuraman, ZeithamI and Berry's research defines service quality as a function of customer expectations. They take the view that service is deemed to be of high quality when customer's expectations are confirmed by subsequent service delivery. They postulate that, as services are less tangible than goods, the dimensions on which customers form expectations may also be different. Initial qualitative research has led to the identification of five dimensions (tangibles, reliability, responsiveness, assurance and empathy) on which customers evaluate service quality. If expectations are not met on any of these dimensions, satisfaction gaps result, and the customer is likely to record a poor rating of the quality of service provided. Over the years, this group has developed their initial qualitative studies into the more comprehensive statistical tool known as SERVQUAL, which is now widely used to measure service quality throughout the services sector, including education.

**Relationship Marketing and Customer loyalty**

Another key concept in creating customer loyalty is the ability of organisations to form relationships with their customers. Relationship marketing focuses on getting and keeping customers and is concerned with customer loyalty because of the long term benefits of retaining customers. The activities involved in it are aimed at developing long-term, cost efficient links between an organisation and its customers.
These relationship building techniques involve, treating customers fairly, enhancing core services by adding extra value and providing a highly customised service.

These ideas have emerged in one piece of research into student retention. Stephen Bruning investigated whether student-university relationship attitudes and satisfaction evaluations distinguished those who returned to university from those who didn’t. He used a series of PR activities aimed at building university/student relationships throughout the academic year and reported that the results from this investigation, demonstrate that student-university relationship attitudes influence student retention, and suggested that retention strategies should include elements designed to build relationships.

Customer retention has a direct impact on profitability; past research has claimed that is can cost five times as much money to create a new customer than to keep an old one. In addition there is research also showing a correlation between customer loyalty and customer spending. Loyal customers spend more than new customers. These ideas are particularly relevant to the business school, because we need not only to retain students on the courses they enrol for – but encourage them to progress through their chosen pathway to higher qualifications; unfortunately this area of retention is only mentioned in passing in the literature and needs further research. Of course it would be unrealistic to assume that all certificate and diploma students will progress on to our MBA programme. And we still need to concentrate our efforts on reducing traditional student attrition, but student loyalty issues should be a core focus of the business school’s attention.

Full text papers from the six presenters, and an editorial providing a linking overview, will be published in a special issue of the journal Open Learning in 2004.

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Improving student retention through evidence based proactive systems at the Open University (UK)

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Improving student retention through evidence based proactive systems at the Open University (UK)

Abstract

The Open University has been undertaking an extended initiative to improve student retention through enhanced support for at-risk students. This initiative has evolved through a series of stages from ad hoc small scale local interventions relying largely on tutors and student self-referral, to an institution-wide pro-active system implemented by specialist staff, backed by cost-effectiveness data based on evaluations of controlled experiments, and driven by management information systems. This paper will outline the similarities and differences between retention in distance learning in the UK and in US Colleges, illustrate the way a programme of planned interventions was evaluated at the Open University, explain how the cost-effectiveness of interventions was established, and describe the integrated proactive system now in operation.

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Background: the Open University, UK

The Open University UK is a large distance learning institution with about 200,000 students all of whom study part time, at a distance. Enrolment on a single course within a programme can exceed 15,000. The students involved in the work described below were all in the UK or mainland Western Europe. The University has undergraduate and graduate programmes covering a wide range of disciplines and professional areas, similar to conventional universities in the UK. It is unusual in that:

- its entry is completely open – anyone regardless of their prior educational qualifications may enter and they may continue to register for any course they wish whether or not they have passed their previous courses and whether or not they have the prerequisite prior knowledge. This inevitably affects retention. It has always been a major challenge to maintain acceptable retention rates with such open access, but the University values openness above all else.

- students (in the main) register for individual courses (normally lasting nine months) rather than for complete degree programmes. Students may take a single course and then leave, satisfied, or may take courses some years and not others over a very extended period. Efforts to improve retention have focussed largely on course completion rather than programme completion (though this is now beginning to change).

- student support takes a very different form than on a face to face campus. Students' main contact with the University is through 7,500 remote adjunct faculty, who mark and comment on regular assignments and provide some support and, on some courses, provide face to face locally organised tutorials.

- The students are mature, with some over 60 years of age, and most over 30. An increasing number of younger students enrol but retention for students under 21 is less than half the average.

Existing theories of student retention were not developed to explain retention in such a context. Tinto’s theory (1975, 1993) has been adapted to suit distance learning (Kember, 1995) but has been found not to fit well either empirically (on the basis of factor analysis of questionnaires based on Tinto’s theory) or conceptually (Woodley
et al, 2001; Woodley, 2004) at the Open University. For mature students at a
distance, campus and social issues are largely irrelevant, and family, home and work
contexts, not under the control of the University, are much more important. Many
students do not seek either academic or social integration. Marketing theory and
notions of customer loyalty may be more relevant.

Conventional higher education in the UK has higher student retention than the US
(see Table 1 below) but the Open University performs less well than conventional
higher education institutions in England. For part time students the average rate of
successful completion of individual courses is 82% at conventional higher education
institutions while at the Open University it is 59% for new students and 69% for
continuing students (Gibbs, 2003a). This is still a much better retention record than
almost any other distance learning organisation, especially compared with the private
sector and on-line education. However the funding regime for universities in England
is based on student completion and so the relatively lower rate of retention compared
with conventional universities causes severe financial problems for the Open
University. It is less clear whether retention is such a problem for many students, who
exploit the openness of the University to the full and are often less interested in
credentials and passing courses than are the government. They may study
conscientiously and effectively but not bother taking the exam. There are, possibly
apocryphal, stories of students who have deliberately failed their last course in order
not to graduate, so they can carry on studying. But it is also clearly the case that
some students would probably progress better if things were designed differently and
if support operated more effectively.

Background: similarities between the Open University and US
Colleges

The authors have gone to some lengths to explore how retention issues are tackled
in the US compared with the UK. Experts concerned with the ‘First year Experience’
have been invited to present overviews at meetings at the Open University (cf
Barefoot, 2004) and UK and US conferences on retention have been attended.
Despite the extensive contextual differences between distance and conventional
contexts and between the UK and US higher education systems, a number of
common features are evident in terms of retention.
As noted earlier UK levels of retention in full time higher education are currently higher than US levels. However past high rates are in part to do with differences in the participation rates (the proportion of the age group in higher education) in both countries. Table 1 shows that the US has the higher participation rates and the lower retention.

If there is a link between high participation rates and low retention then it may arise from the finding common to the US and UK of a clear relationship between a student's educational qualifications on entry (in England ‘A level points’, in the US ‘Grade Point Averages’) and their subsequent retention (Ashby, 2004; Simpson 2003). If increasing participation means that a larger number of students are admitted to higher education with lower educational qualifications then that is likely to lead to a decrease in retention. Thus the UK Government's declared policy of raising UK higher education participation rates to near US levels may be accompanied by a decrease in retention to nearer US levels, though the traditionally high levels of student support by faculty may avert this.

Interest in retention in the US and UK

The currently higher levels of retention in the UK compared to the US may be part of the explanation for the apparent lower level of interest in retention issues in the UK than the US. For some institutions there is still effectively no problem. The government has set a retention target of 97% of students completing their three year undergraduate programme for the University of one of the authors (Gibbs) and this target has always been exceeded. There is no equivalent in the UK to the 'Journal of College Student Retention', no email listserv on retention, no educational consultancies such as the Noel-Levitz organisation working on retention and relatively few publications on retention in the UK either as books or journal articles. If, as suggested above, UK retention rates continue to fall as a result of increased participation this situation is likely to change and institutional attitudes to retention will become of particular interest. Universities that have much wider participation than the national average are starting to set up special units, appoint special staff and re-orient institutional learning and teaching strategies, to address retention problems. The first regional and national conferences on student retention began only in 2002.

Improving student retention through evidence based proactive systems at the Open University (UK)
Patterns of retention in the US and UK

Dropout in both the US and UK appears to follow very similar patterns, being very heavily front loaded in both countries. In the Open University UK some 13% of new students drop out before courses start and nearly 30% before the first assignment. In addition both countries experience a surge in dropout at the end of the first year – the ‘sophomore slump’.

Institutional attitudes and policies to retention in the US and UK

A common characteristic that may be detectable in both US and UK retention studies is ambivalence in institutional attitudes towards the topic. Anderson (2003) suggests that such attitudes fall into a spectrum somewhere between ‘survival of the fittest’ and ‘remediation’. The ‘survival’ end of the spectrum is characterised by high status institutions whose retention policies are largely concerned with the very careful selection of students on entry and that subsequent student support is relatively weakly emphasised. ‘Remediation’ institutions have much less control over the educational qualifications of their intake and offer reactive remedial help to maintain their levels of retention. But such support is often taken up only by students who are able to recognise their needs and are sufficiently assertive to respond to offers. Anderson suggests that the attitude that support need only be reactive may well be most common amongst teaching faculty and that student support services may take a more proactive approach.

Anderson’s model describes the UK situation quite well, with a number of high status universities – Oxford, Cambridge and a few others – with very high retention rates of up to 98% and a large number of ‘new universities’ with much lower rates of 60-70%. Both groups have retention policies to match but even the remedial institutions are largely reactive.

‘In the first year at X University students are not closely monitored......The general ethos is that staff make available learning and support opportunities but if students don’t take advantage of them there is little comeback.’ (from a UK listserv 2003).
Proactive intervention in the US and UK.

In Anderson's terms the Open University UK is an intensively remedial institution offering support to students on a reactive basis. However there is now growing recognition that this is not enough to maintain and increase retention and attention is increasingly turning to proactive interventions as one of a number of measures to increase retention. The policy being developed in the Open University UK can be described in part by the 'formula' used to summarise the basics of retention by Seidman (2003): that retention is dependent on the early identification of students vulnerable to dropout, followed by early, continuous and intensive proactive interventions with those students.

Currently in the Open University UK the process of early identification of vulnerability is carried out statistically from characteristics known at registration stage such as age, sex, previous educational qualifications and occupation. There is currently no intention to use more sophisticated methods such as the Noel-Levitz College Student Inventory™ questionnaires, which are difficult to administer at a distance.

The cost benefits of retention interventions in the US and UK

As noted earlier, government funding for UK institutions is partly dependent on retention. It has proved possible to calculate the 'cost per student retained' and demonstrate the financial benefits of increasing retention as a result. The details of this approach are discussed later in this paper but a comparison between US and UK retention can be made this way despite the differences between funding systems. For example Mager (2003) reported a study at Ohio State University using 'tele-counsellors' to contact new students at course start. This demonstrated an improvement in retention of 4% at a cost per student retained of $169 which gave a 'return on investment' of 650%. This compares with the results from a very similar activity in the Open University UK (Simpson 2003) where a targeted telephone interventions led to an increase in retention of 3% with a cost per student retained of around £300 ($500) giving a return on investment of 300%. The development of comprehensive policies and systems, supported by adequate funding, has, at the Open University, depended crucially on such cost-benefit analyses.
Other comparative retention activities in the US and UK

Finally there are areas of clear similarity involving a range of retention activities in both the US and UK. For example there is clear evidence in both countries of the importance of student-student mentoring and 'supplemental instruction'. For example mentoring appears to have a very high retention effect in the Open University UK, though administrative costs are high (Simpson, 2003).

There is also agreement on the importance of involving families, friends and employers in student support for retention although the effect of such support is very hard to evaluate. One apparent difference which may be characteristic of distance education is the additional emphasis in the Open University UK on getting students onto the right course in the first place, using both advice and course diagnostic tests, course preview materials and other students' views on courses. Wrong course choice is the second most common reason for drop-out in conventional universities in the UK (Yorke, 1999). However although there is considerable agreement on the importance of course choice the retention effects of support designed to inform course choice is difficult to assess. And students routinely ignore advice.

Four stage process of development of retention efforts

An institution-wide initiative to improve student retention was begun at the Open University in 2000. One element focussed on analysis of institutional data on student progress in order to identify institutional and course characteristics associated with poorer retention. For example poorer retention was found to be associated with greater perceived workload on a course (as identified in an annual 'courses survey') and has led to efforts to reduce workload in offending courses and to raise teachers' awareness of workload issues at the course design stage. A second element focussed on student support issues: especially the role of the 7,500 part time adjunct faculty who undertake all the tutoring in the Open University. It is this second strand that this paper focuses on. The student support initiatives have progressed through four stages.

- In 2001 £500,000 (c. $700,00) was allocated to fund efforts to support 'vulnerable' students. Vulnerability was initially defined narrowly in terms of those...
students in receipt of financial support, but quickly widened to include a variety of definitions of vulnerability. Each Region undertook their own programme of interventions, in addition to existing efforts, and undertook their own evaluations. A great deal was learned about the practicalities of operating a wide variety of support mechanisms, but the evaluations failed to provide any convincing evidence of impact. Overall student retention across the University remained unchanged and the impact of individual projects and initiatives was not possible to identify amongst the noise of countless other variables, including variations between students. There were no control groups or baselines against which performance associated with any particular intervention could be compared.

In 2002 a further £500,000 was allocated to fund retention efforts through the Regions, but this time a strategic evaluation framework was created. By scanning across the full range of retention-related activities being undertaken it was possible to identify a group of Regions undertaking a particular intervention (usually across a wide range of courses and subject areas) while another group of Regions (with students on the same courses) were not undertaking the same intervention. This second group formed a natural 'control' for the first group. Despite the noise in the system from the sheer range of other initiatives and practices undertaken, the student numbers in the Open University are so large that even quite small effects can be identified as statistically significant. For example a study of the impact of early individual tutor contact with students prior to submitting their first assignment, described below, involved over 2,600 students. Parallel 'project teams' were formed of Regions undertaking the same kind of interventions and research support was provided to enable them to collect the necessary data and to compare it with data from natural control groups. Questionnaires and interview schedules were devised for each project team and used in an identical fashion in each Region wherever the intervention was being used, and also with the control groups, with central collation of data. Two examples of interventions and their evaluation are described below.

In 2003 three Regions were selected to take the interventions identified as effective in 2002, to build them into a coherent 'proactive student support system', and to evaluate the combined impact of these interventions. Each of the three Regions implemented a slightly different version of the system in order to explore operational issues. One such system is described below. Again central support was provided to evaluate both impact and, crucially, cost-effectiveness.

Improving student retention through evidence based proactive systems at the Open University (UK)
Up to this point there had been 'project funding' but if efforts were to be mainstreamed then the financial benefit of retaining an identified additional number of students needed to be compared with the cost of the interventions.

- In 2004 it is intended to implement a single proactive student support system across all Regions, for all students in the University. A financial case for the system has been made, checked by accountants, and accepted.

The next two sections each outline one type of intervention studied in 2002, to illustrate the way the retention initiative has progressed.

The impact of early tutor interventions

Analysis of the pattern of student withdrawal from courses had shown clearly that if a student does not submit their first assignment (of either four or eight assignments, depending on the size of the course) then they are very unlikely to complete the course. The vast majority of drop-out occurs very early in courses. Given the low prior educational qualifications of Open University students it is assumed that those studying at a distance for the first time may approach their first assignment with low expectations of their ability to cope. A common intervention planned by Regions was for the students' tutor, or for a special student support advisor, to telephone each student, several weeks before the first assignment submission date, for general encouragement and whatever support or guidance seemed appropriate. A study was devised with a project team of seven Regions to study the impact of this intervention.

The student sample consisted of students new to the university (a high risk category) on eight courses (selected to be have lower than average retention) involving students across seven of the University's 13 Regions. The sample was selected to involve at least one course from each faculty and at least one course from each level (equivalent to years one, two and three). The sample included 2,638 students of whom 1,346 received additional support and 1,292 did not. Students in the control group that did not receive support were identified in two ways:

- students on the same course in the same Region but in tutor groups where the tutor was randomly identified not to receive funding to provide additional contact and support;
- students on the same course but in a different Region where there was no policy of funding additional contact and support by the tutor at this early stage in the course.

Data from the university’s management information system on all these students was collated, including whether they submitted the first assignment, what grade they received on the assignment, and whether they passed the course at the end of the year and what course grade they received.

The entire sample of contacted students was surveyed using a questionnaire. The questionnaire focussed on students’ perceptions of the nature of impact of the contact. The questionnaire response rate was 59%. A small sample of students from each course and each Region was interviewed using a structured interview schedule. Interviewers from Regions were employed and briefed.

79% of students who were contacted submitted their first assignment and gained a grade of A-E (pass grades), compared with 75% of the control group who were not contacted (see Table 2). 20% of those who were contacted did not submit the assignment, compared with 24% of students not contacted. While these are not large differences this pattern varies significantly from what would be expected if contact made no difference ($\chi^2 = 11.99$, 2df, p<0.01). And while this is a difference of a size that would not be visible to individual tutors who have only 20 or so students each year, replicated across the whole university involving 200,000 students it would be very important: a 4% improvement in assignment submission rates would involve 8,000 students.

[Table 2 here]

This relationship between contact and grades persisted to the end of the course. The proportion of students gaining grades of 1-4 (grades above a bare ‘pass’) was 6% higher for students who were contacted than for those who were not contacted (see Table 3). The pattern of grades for students who were contacted and not contacted varied significantly from what would be expected if contact made no difference ($\chi^2 = 30.36$, 3df, p<0.001).

[Table 3 here]
The questionnaire findings revealed that contact had more impact in terms of encouraging students and clarifying assignment demands that it did in terms of providing study guidance (see Table 4).

[Table 4 here]

The differences between student responses to these statement are quite marked and indicate either what it is reasonable to expect contact to have an impact on, or what contact currently concentrates on.

The extent to which students agreed with the statement “As a result of contact I felt encouraged to submit TMA01” was analysed by type of contact. Phone contact was most likely to be perceived as encouraging and letters and computer conferencing (using the ‘First Class’ system) least likely to be perceived as encouraging (see Table 3). Adding other types of contact to phone contact did not increase the extent to which students felt encouraged.

[Table 5 here]

The data suggest that:

- it is worthwhile to students for their tutors to contact them prior to their first assignment. Such contact increases the likelihood of them submitting their first assignment and increases the likelihood of them gaining good grades both in their first assignment and for the course overall;

- the impact of such contact appears to be primarily motivational. It is unclear if this is because that is what tutors mainly concentrated on or whether that is what such contact is capable of achieving;

- the telephone is still be best form of contact, despite extremely wide use of e-contact within the University, with over 160,000 students using ‘First Class’ e-conferences.

It has proved possible to target such proactive early contact by using a mathematical model predicting student likelihood of success, based on data stored on the University’s management information system. Mathematical predictors reveal extremely wide variations in students’ chances of succeeding: from below 1% to...
approaching 90%. In one Region such a predictor was used to rank order all students, and proactive telephone contact was made starting at the bottom of the list (those with the lowest predictors) until resources were exhausted. This increased the impact of intervention on assignment submission and course completion, and so such targeting can increase cost-effectiveness. It is not yet known (due to the modest sample sizes in that study) if it is more cost-effective to target interventions on students with predictors close to 50% or on those with very low predictors.

Support for fail and resit students

Those students who fail their examinations can be offered another chance to re-sit the examination at a later date – usually a year later. About a quarter of such students do not take this opportunity. A number of interventions have involved contacting these students and offering encouragement to take the re-sit examination and support to help them in their preparation.

A questionnaire was sent to all 1,440 students in seven Regions who completed a course but failed after taking the exam in 2001. 546 replies were received (38%) which is below expected response rates within the University and illustrates the difficulty of finding out about students who have already failed or withdrawn. 244 students (45%) used support services of some kind and 302 students (55%) did not use any support services. Of the 244 students who used the support 229 (94%) went on to sit the exam and 15 students (6%) did not sit the exam. Of the students who did not use support more than four times as many did not sit the exam. This pattern of response to support was statistically significant ($\chi^2 = 38.1$, 1df, $p<0.001$).

[Table 6 here]

However it would be incautious to interpret this difference as evidence of impact of support on resit rates as:

- the students who responded to the questionnaire were likely to have been different from those who did not who may already have completely dropped out of the system;
• the students who took advantage of support were likely to have been different in terms of motivation and strategy from those who did not: they may have re-sat the exam as a consequence of their motivation regardless of the support.

In general the University is moving away from forms of support that students have to choose to opt in to (as this results in allocating scarce resources only for the most motivated and strategic students). Instead it is moving towards targeted support for all those identified as at risk or likely to benefit, in a proactive way that does not rely on student initiative.

A comprehensive proactive student support system

Evidence such as that outlined in the sections above has been used to devise a comprehensive system of student support involving several kinds of proactive intervention, and variations have been implemented in three Regions in 2003. The Open University in the North supports about 26,000 students in the north of England and a further 5,500 in the countries of continental western Europe. The retention project began in November 2001. Its outcomes may only be properly judged after several years' operation, because student re-registration and the completion of programmes, in a modular system, is as important as the completion of individual courses. However the project has already demonstrated how problems such as the 'longitudinal' support of students outside the temporal boundaries of individual courses can be addressed. It also shows that it is possible to integrate reactive and proactive services to students and enquirers, provide faculty-specific expertise under the umbrella of a general advisory service, and engage administrative expertise to support the project throughout.

Staffing and objectives

The initiative involved a 'Student Services Manager (Retention)', managing a team of 'Associate Advisors', all of whom were adjunct faculty and many of whom had experience working as part-time advisers. These staff were contracted for discrete phases of work at different times in the year, though many undertook work in several of the phases described below. The objectives of the work of these Associate Advisors are to contact those students:

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who are known to be at risk;
- who need advice or support following the despatch of examination and course results;
- who can be resurrected from dormancy or rescued from indecision;
- ...and subsequently to provide both a helpline and a source of support for course tutors in their role of assisting their students to make progress.

Proactive intervention phases

The interventions involved six phases, spread across an academic year (February to October), and focused on undergraduate students on courses with February start dates. A full year's work was carried out in 2002, and the work was refined, repeated and extended for 2003

Phase 1 November to February (between courses): to contact all students – some 1,500 of them – who failed their previous course, and to offer support and advice.

Phase 2 January (before course start): to contact all students new to the University – over 300 of them - who had passed their previous course(s), who had not completed a qualification, but had not yet registered for a course in the new year.

Phase 3 January – February: to contact all students (over 300) who had been offered the opportunity to resit examinations.

Phase 4 From February (course start): to provide a helpline for tutors. Members of the retention team, working in discipline-specific areas, contact all the region's tutors to offer support and advice about students with whom there is difficulty in establishing contact, or in submitting work for assessment, usually the first assignment.

Phase 5 Mid-year: review of student progress and further identification of vulnerable students, in conjunction with course tutors.
Phase 6

October: contacting those who had not attended their examinations, and offering administrative support, such as arranging a deferred exam if there was reason, and advising about study options in light of their failure.

For 2003, the refinements included a variety of initiatives to identify students who are vulnerable to failure at points where there was evidence of lack of progress. A software tool has been developed that automatically calculates, for every student, what mark would be required in the final exam, given their current test scores and assignment grades, and so identifies how near or far students are from having enough marks to pass the course. This is necessary because the ways in which coursework grades and exam marks are added up is complicated, and varies from courses to course, and students do not understand how this works. This software tool was used towards the end of the year, specifically to avoid students deciding to drop out when their results so far could still have allowed them successfully to complete the course. In a parallel study in another Region all 'inappropriate withdrawals' were identified in this way and contacted, and almost 50% were brought back into study and successfully completed their courses.

By mid-February, attempts have been made to telephone all 'failed' students in Phase 1, and letters sent where telephone contact had not been possible. By the end of January, Phase 2 was complete. By mid-March, all resit students in Phase 3 had been contacted and resources to support them offered. These first three phases involve 'longitudinal' support for students, from the regional office, at a time when students have no tutor allocated to them and cannot be thought of as 'belonging' to any particular tutor or course.

The tutor helpline

The retention team make contact with all tutors in their disciplinary groups, to act as a support where there is evidence that individual students within each tutor group are either difficult to contact, or showing evidence that they will be late in submitting work. The team's function has been widely publicised in the Region and they both make proactive contact with tutors and react to requests from tutors. Perhaps more importantly, they establish a forum for dialogue with tutors, enabling monitoring of 'at risk' students to take place as the year progresses. Through this dialogue, it is possible to identify students for whom additional resources of tutor time may be...
appropriate (special sessions), or who it may be profitable to encourage to withdraw. One of the most important impacts of the work of the retention team is that it prompts tutors to take a more proactive role themselves and raises their awareness of potential risks faced by their students. It also increases the rate of referral by tutors of student problems to specialist advisors in the Region, for example on disability or financial issues.

End of year interventions

Much attention is paid to the predicament of students who fail their courses. There is a gap in the university’s provision, in that no individual or unit has responsibility for maintaining contact with a student once the course for which they have registered is finished. The retention team, in various ways, plug that gap. They review student performance, remedy administrative difficulties and offer consultation with students concerning future course choice and the awards to which they may lead.

The team’s proactivity provides considerable support to the full-time Student Services Managers (Advice and Guidance). It reduces the volume of reactive response to student problems by anticipating difficulties, and using proactive telephone or e-mail contact with tutors, who are in regular personal touch with students, to identify those at risk. It also provides a practical link between the region and its tutors, many of whom feel they work in isolation.

A University-wide system, for all Regions, is being developed for implementation in 2004, based on the system that operated in the North of England in 2003.

Outline cost/benefit argument

Calculations have been made of the likely impact of each type of intervention for which evidence of impact is known, if it were scaled up across all Regions, for all students likely to benefit, on all appropriate courses. All interventions for which there is no adequate evidence of impact have been excluded. This has enabled estimates to be made of the total number of students a fully implemented system could be expected to support through to successful completion of a course (defined for funding purposes as sitting the end of course exam). Government funding for students is dependent on student completion and so an estimate can be made of the additional income received as a result of improved course completion. There are inevitably
complexities about how funding follows student progress and these will not be elaborated here, but each student completing a (60 credit) course earns the University about £1,330. In addition students who are retained do not need to be replaced by newly recruited students, and marketing and recruitment at the Open University is very expensive, costing about £200 per student recruited.

Costs of retention activity have been established in two ways:

- by costing each element of interventions, per student (for example the cost of each telephone call, given their average length and staff costs per hour) and adding the costs of each type of intervention given the number of students involved in each;

- by dividing the total cost of a Region’s support system, including all elements, by the total number of students supported, by whatever means.

Overall estimates of costs per student supported have then been based on these two means of calculation (Gibbs, 2003b). The simple calculations outlined here have been checked by the University’s finance office and while formal accounting approaches to costing are considerably more complex, the conclusions are largely the same.

- a fully implemented system across all Regions targeted on 35,000 students would cost an additional £775,000 per year above current student support activity costs. No allowance was made for abandoning some existing student support activities, though is would be likely. No allowance was made for possible economies of scale and rationalisation as a larger comprehensive system was operated, possibly centrally or from only some Regions rather than in thirteen Regional locations in parallel, though this is also likely.

- such a system could be expected, on the basis of the pilot studies, to result in the course completion of an additional 1,481 students a year (4.2% of those targeted for support), and hence to earn £1,969,730 in additional fee income from the government.
• 1,418 fewer new students would need to be recruited, bringing a saving of £296,200 in recruitment costs.

• This would produce a positive balance of £1,490,930 a year. There would need to be additional annual financial support for the continued evaluation of the system and a one-off investment in more robust computer systems that would provide the management information to prompt interventions.

Such calculations do not take into account possible improvements in students' retention (and consequent financial gain to the University) on subsequent courses as a result of positive impact of support being provided on the previous course. Nor do they take into account potential benefits to students who received support, and where there were improved grades or an improved sense of satisfaction with the University, but where there was no change in their likelihood of course completion.

The future for student support at the Open University

The retention initiative has brought about a sea change in attitudes towards how student support should be organised in order to improve student retention. In particular:

• being less willing to fund ad hoc local variations in student support systems, where there is no evidence of benefit to retention, and instead investing in proven systems that are implemented more uniformly across the whole institution;

• being more proactive and less reliant on student self-referral;

• targeting support more effectively, using management information systems, administrative monitoring and mathematical predictors so that proactive intervention can be made for those student most at risk and most likely to benefit (and also so that resources are not wasted on those who neither need nor welcome it);

• timing such interventions better, through identifying student decision-making points during courses and intervening appropriately before these decisions are
taken. Much previous support activity simply occurred too late in the course to be effective or after students had already decided to withdraw.

- hiring and training specialist student support staff who are supported by sophisticated information systems, rather than relying on tutors to monitor student progress themselves, diagnose risk themselves, and make timely proactive interventions themselves;

- supporting and prompting tutors, who are still the first line of student support, so as to increase the volume, timeliness and impact of their support, without increasing staff costs;

- focussing more on the period between courses so as to support students in making course choices and re-registering, or in retrieval through support for re-sitting exams.

- and perhaps most importantly in the current climate, undertaking thorough evaluations so that convincing cost-effectiveness cases can be made in the face of budget cuts and political imperatives. So far evidence is available about the impact and value to students of individual interventions under relatively controlled conditions. There is not yet evidence of the overall impact of the structured system of interventions which has now been implemented.
References


SEIDMAN, A. http://www.collegeways.com/retention_slideshow.htm


- 21 -

Improving student retention through evidence based proactive systems at the Open University (UK)


WOODLEY, A. DeLANGE, P. and TANEWSKI, G. (2001) Student Progress in Distance Education: Kember's model re-visited *Open Learning*, 16(2), pp. 113-131.


Table 1 Participation and retention rates in US and English higher education.
(OECD, 2000)

<table>
<thead>
<tr>
<th></th>
<th>Students obtaining degree as a % of those starting courses</th>
<th>Higher education participation rates as a % of the age group</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>&quot;</td>
<td>63%</td>
</tr>
<tr>
<td>England</td>
<td>81%</td>
<td></td>
</tr>
</tbody>
</table>
Table 2 Grades and submission rates for the first assignment for students who were contacted and not contacted

<table>
<thead>
<tr>
<th>Grade for the first assignment</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>A-E</td>
<td>1,057 (79%)</td>
</tr>
<tr>
<td>Fail</td>
<td>8 (&lt;1%)</td>
</tr>
<tr>
<td>No submission</td>
<td>244 (20%)</td>
</tr>
</tbody>
</table>
Table 3 Course grades for students who were contacted and not contacted

<table>
<thead>
<tr>
<th>Grade for the whole course</th>
<th>Contact</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>1 – 4</td>
<td>568 (40%)</td>
<td>408 (34%)</td>
<td></td>
</tr>
<tr>
<td>Pass</td>
<td>79 (5%)</td>
<td>129 (11%)</td>
<td></td>
</tr>
<tr>
<td>Resit</td>
<td>48 (3%)</td>
<td>33 (3%)</td>
<td></td>
</tr>
<tr>
<td>Fail</td>
<td>303 (21%)</td>
<td>281 (23%)</td>
<td></td>
</tr>
</tbody>
</table>
Table 4 Student perceptions of the nature of impact of contact (n = 794)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Statement</th>
<th>% of students agreeing or strongly agreeing</th>
<th>% of students disagreeing or strongly disagreeing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I felt encouraged to submit TMA01 [1]</td>
<td>61%</td>
<td>7%</td>
</tr>
<tr>
<td>2</td>
<td>I felt encouraged to continue with the course</td>
<td>56%</td>
<td>8%</td>
</tr>
<tr>
<td>3</td>
<td>I understood better what was required of me to complete TMA01</td>
<td>48%</td>
<td>15%</td>
</tr>
<tr>
<td>4</td>
<td>I understood what was required of me to continue with the course</td>
<td>42%</td>
<td>15%</td>
</tr>
<tr>
<td>5</td>
<td>I felt more confident in my ability to complete TMA01</td>
<td>40%</td>
<td>15%</td>
</tr>
<tr>
<td>6</td>
<td>I felt more confident that I would be able to complete the course</td>
<td>36%</td>
<td>14%</td>
</tr>
<tr>
<td>7</td>
<td>I have changed the ways I approach my study of the assignment</td>
<td>26%</td>
<td>24%</td>
</tr>
<tr>
<td>8</td>
<td>I have changed the ways I approach my study for the course</td>
<td>24%</td>
<td>20%</td>
</tr>
</tbody>
</table>

[1] 'TMA01' is the first tutor-marked assignment of a course and normally comes 3 - 6 weeks into the course.
Table 5  Student perceptions of the value of different types of contact, in response to the statement ‘As a result of contact I felt encouraged to submit the (assignment)’ (n = 794)

<table>
<thead>
<tr>
<th>Type of contact</th>
<th>Telephone</th>
<th>Personal email</th>
<th>Letter</th>
<th>On-line conference</th>
<th>Telephone + other(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% agree/strongly agree</td>
<td>79%</td>
<td>67%</td>
<td>57%</td>
<td>43%</td>
<td>73%</td>
</tr>
</tbody>
</table>
Table 6 Exam attendance rates for students who did and did not use exam re-sit support (n=546)

<table>
<thead>
<tr>
<th>Student use of support</th>
<th>Sat exam</th>
<th>Did not sit exam</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used exam re-sit support</td>
<td>229 (94%)</td>
<td>15 (6%)</td>
<td>244 (45%)</td>
</tr>
<tr>
<td>Did not use exam re-sit support</td>
<td>226 (75%)</td>
<td>76 (25%)</td>
<td>302 (55%)</td>
</tr>
<tr>
<td>Total</td>
<td>455 (83%)</td>
<td>91 (17%)</td>
<td>546</td>
</tr>
</tbody>
</table>
Assessment Matters in Higher Education
Choosing and Using Diverse Approaches

Edited by
Sally Brown and Angela Glasner
Using Assessment Strategically

4

To Change the Way Students Learn

Graham Gibbs

Introduction

Assessment is the most powerful lever teachers have to influence the way students respond to courses and behave as learners. This chapter will use a case study of a radical change in assessment within an otherwise conventional course to analyse the functions of assessment and the dramatic ways in which students can be reoriented and their performance improved. The framework derived from this analysis is used to explain how a range of assessment innovations can change the way students learn, with examples of each. Details of how to implement some of these assessment methods are elaborated in other chapters. Here I will provide a rationale for choosing between these methods.

Strategy and tactics

Much of what is presented as good practice in assessment is described in terms of tactics: specific techniques such as using criteria on feedback sheets to students. This chapter is about using assessment strategically, regardless of specific tactics, to achieve particular strategic goals. In order to see how to operate strategically, it is important to understand something of the changed context in which assessment in higher education is operating.

By the late 1990s, modules at Oxford Brookes University were designed in such a way that students were supposed to spend, on average, three-quarters of their total learning time outside of class. In some final-year modules, especially project-based modules, they were supposed to spend nine-tenths of their time out of class. When the ratio of in-class to out-of-class learning time is about 1:1 what happens in class exerts considerable leverage over what students do out of class. Preparation before tutorials or
labs and reading or writing up after lectures or practical classes dominates
what students do in their studying. A lecture may inspire a student to read
more. A seminar may induce preparation to avoid social embarrassment.
In-class hours may influence some of the hours out of class but much of this
time is probably more influenced by the nature of assignments, by assess-
ment criteria, by perceptions of what the important topics are and which
might be examined, and so on.

Qualitative studies of the way students respond to assessment, or at least
to their perceptions of assessment, provide a vivid insight into its central
importance in their lives. At MIT, Snyder (1971) painted a vivid picture of
how students learnt to see behind the formal curriculum and orient them-
selves to what he termed the 'hidden curriculum'. In particular, he showed
the extent to which students constructed their own understanding of the cur-
riculum from messages, explicit and implicit, about what counts in assessment.

'Just don't bother doing the homework now. I approach the courses so
I can get an "A" in the easiest manner, and it's amazing how little work
you have to do if you really don't like the course.'

(Snyder 1971: 50)

In a study of students' orientation to the assessment system at Edinburgh
University (Miller and Parlett 1974) researchers distinguished between stu-
dents who sought out information about what counted in assessment ('cue
seekers'), those who were aware of these cues and responded to them
('cue conscious'), and those who missed the cues no matter how often they
were told and sometimes misoriented their efforts ('cue deaf'). The extent
to which students were cued in to assessment demands was found to be a
strong predictor of their overall performance. In both the Snyder and Miller
studies the assessment system was found to be the dominant influence
on the way students learnt: on how much effort they put in and what they
allocated this effort to.

Interviews undertaken at Oxford Brookes University in the mid-1990s dur-
ing studies of students' responses to class size reinforced this picture. In trans-
scripts of the interviews, almost every paragraph contained references to the
assessment system and the way it affected students' study patterns. These
findings suggested that teachers' preoccupation with what went on inside
large classrooms was misplaced. It was found that differences between the
assessment regimes used in small and large classes were strongly related to
differences in student performance (Gibbs and Lucas 1997). At Leeds Metro-
politan University the extent of students' orientation to assessment has been
quantified through extensive diary studies, logging exactly how students
spend their time (Innis 1996). It was found that not only did assessment
take up the majority of students' time out of class but this trend increased
markedly over time. By Year 4 about three-quarters of student learning tim

was spent out of class and almost all of this time was spent on assessed tasks
with only about 5 per cent of student time spent on out-of-class activity
unrelated to assessment.

The increase in the extent to which students behave strategically is in part
a cultural and economic phenomenon (MacFarlane 1992). Students who
work in the evenings to pay off debts, and who worry about the competition
for employment after graduating, tend to make very careful use of their
time and effort. Faced with contexts as powerful as this, teachers have little
choice but to go with the tide and use assessment strategically. If it is going
to have a profound influence on what, how and how long students study
then it might as well be designed to have educationally sound and positive
influences rather than leaving the consequences to chance.

The focus in this chapter is on strategically manipulating the global re-
response of students to the total assessment system. A variety of tactics might
achieve similar strategic goals and it is the rationales behind these tactics
rather than the details of their operation which will be explored. The stra-
tegic goals which are worthwhile pursuing will emerge as we analyse case
studies.

A case study in cheap and effective change

This first case study illustrates how a modest change in an assessment regime
achieved dramatic improvements in student performance. Its analysis draws
out the principles which underlie this success, principles which can be used
to guide strategic change in assessment in any context. This case study, like
the others used here, is based on a real course but has been idealized to
present a clearer picture of what went on.

The course was a compulsory second-year module of an engineering
degree. Traditionally, it had been taught by twice-weekly lectures and weekly
problem classes at which students worked on problem sheets handed out at
the lectures. The problem sheets were marked by lecturers and handed
back each week and the problem classes were relatively small with about
ten students. Assessment was by exam and contained problems similar to
those on the problem sheets. Average marks were about 55 per cent, much
the same as on other modules, and the failure rate was acceptably low.
As student numbers increased and eventually doubled, several problems
emerged. In problem classes of over twenty, students could hide simply by
avoiding eye contact and not asking questions, and as a result they could
get away with having prepared poorly. The marking load became crippling
and marking of weekly problem sheets had to be abandoned. The lectures,
problems and exam remained the same as before but the average mark
dropped to 45 per cent with a substantial failure rate.

The department could not afford to reinstate weekly marking of problem
sheets and could not afford small problem classes. They looked around for
possible alternative solutions and found one from which they could

Using Assessment Strategically to Change the Way Students Learn 43
which involved peer assessment. Their implementation of peer assessment had the following features:

1. Students met in a lecture theatre on six occasions during the course, bringing with them all the problem sheets they had tackled up to that point and since the last peer-assessment session. They handed in their problems and these were randomly redistributed along with the kind of marking sheets which a postgraduate student would need to mark the problems. Students then marked whatever problems they found in front of them, using the marking sheets for guidance. They did not mark in careful and rigorous ways, there was no quality control over their marking and they were personal and forthright in their comments. They could see whose problem they were marking, but when students got their own problem sheets back it was not possible to tell who the marker had been.

2. The problem sheets were then handed back immediately but marks were not recorded and did not count towards course marks. Teachers were not involved at all in this process.

3. Students were required to complete a specified number of problem sheets, about three-quarters of the total. The problems which they had tackled were logged at the peer-assessment sessions. If they did not get sufficient sheets logged then they could not sit the exam and so failed the course.

4. Lectures, problem sheets, problem classes and the exam remained unchanged. The only change to the course was these six peer-assessment sessions which did not contribute to course marks.

5. For the purposes of distinguishing between students, the final examination was marked and all the problems undertaken and marked during the course were ignored. For the purpose of providing an external examiner with samples of student work to assure standards, again the exam was used and the coursework ignored.

The average marks in the exam increased from about 45 per cent to about 75 per cent with almost no failures and a good many outstanding performances. Marks were considerably better than during the previous years when teachers had marked problem sheets regularly and had held problem classes with much smaller groups.

When a transformation in performance on this scale occurs, it is likely that some important principles are involved. What are the most likely explanations, and what are the accompanying underlying principles? First, students actually did the problems. Previously when they had not been marked and there was no social pressure in problem classes to turn up prepared, they had simply stopped doing enough problems to learn. There are two underlying principles here. The first is 'time on task'. This is one of the 'Seven Principles for Good Practice in Undergraduate Education' (Chickering and Gamson 1987) shown in Table 4.1. This principle is based on research about the time students spend studying and the effect this has on their performance. Basically the principle is, 'If you don't spend time on it, you won't learn it'.

### Table 4.1 The 'Seven Principles for Good Practice in Undergraduate Education' (Chickering and Gamson 1987)

<table>
<thead>
<tr>
<th>Principle</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Good practice encourages student-faculty contact.</td>
<td></td>
</tr>
<tr>
<td>2. Good practice encourages cooperation among students.</td>
<td></td>
</tr>
<tr>
<td>4. Good practice gives prompt feedback.</td>
<td></td>
</tr>
<tr>
<td>5. Good practice emphasizes time on task.</td>
<td></td>
</tr>
<tr>
<td>6. Good practice communicates high expectations.</td>
<td></td>
</tr>
<tr>
<td>7. Good practice respects diverse talents and ways of learning.</td>
<td></td>
</tr>
</tbody>
</table>

Assessment is an excellent way of getting students to spend time on task. However some assessment, such as final exams, distributes this time ineffectively, concentrating it immediately before the assessment rather than evenly across the course. Coursework assessment usually succeeds in capturing student time during the course but may focus it on a narrow subset of the course material at a particular point in time, for example on one essay question in week seven rather than evenly across all topics in all weeks. Making the tackling of problem sheets a weekly task and requiring sufficient problem sheets, to be completed by six intermediate deadlines, as in this case, both captured student time and distributed it reasonably evenly.

The second principle here is that not only did the assessment generate enough learning activity, it generated appropriate learning activity. The best way to learn how to tackle problems is to tackle lots of problems. Time spent in other ways (e.g. reading lecture notes) is unlikely to be as effective. Many assessment tasks generate uniquely appropriate learning activity which disappears if the assessment task disappears. For example, the reduction in the use of coursework essays forced on many courses by increased student numbers and resource constraints has in all probability led to a change in the nature of the reading students do. To write an essay you need to 'read around' a topic to develop an argument. Reading for a seminar or to prepare for an exam is qualitatively different. If you take the essay away, this kind of 'reading around' probably declines or even disappears. Assessment substitutes such as multiple-choice questions are extremely unlikely to generate this kind of reading. Appropriate assessment engages students in exactly the kind of learning activity you want to take place. Not all widely used conventional assessment tasks succeed in doing this. For example, writing up lab reports after lab sessions designed by the lecturer is unlikely to develop experimental design skills.

In this case study, the assessment in addition generated new forms of appropriate learning activity. Not only did students tackle the problems, they also marked other students' attempts at the problems. In doing this, they will have noticed other ways to succeed with problems than those they worked out for themselves, solutions to problems they could not solve, errors just like the silly ones they made themselves and other errors which they will have been alerted to avoid. The care and trouble other students
take and the sloppiness of some other students is made visible and helps
to calibrate the level of effort which is required and the standard which
is expected. The model answers used will have provided clear reference
points to reflect on their own solutions. The act of marking brings with it a
heightened focus of attention to detail and a new perspective on one's own
work which simply tackling the problems may not achieve. Note that this
use of peer assessment did not involve marks which counted towards stu-
dents' grades for the course: only the exam contributed marks. The value
in the peer assessment came substantially from the act of marking: it created
appropriate learning activity.

The third principle illustrated by this case study concerns the role of
feedback. It is a truism that learners require feedback in order to learn. To
get better at playing darts you have to be able to see where the darts land.
When students stopped having their problem sheets marked, they stopped
getting feedback and their performance declined. But there is more to
feedback than simply marking or not doing so. It has to happen reasonably
soon after the learning activity: 'Good practice gives prompt feedback' is another of the 'Seven Principles for Good Practice in Under
graduate Education' and the keyword here is 'prompt'. In the face of increas-
ing student numbers, it is common for feedback to be slow: the sheer volume
and logistics of commenting on and returning student work within a week
defeats all but the most committed and organized teacher. And three weeks
after submitting an assignment, students have moved on to another topic
and are tackling another assignment for another course. They may not care
about anything except the mark and may not even read feedback which has
been carefully and expensively provided. It is common on courses lasting
a single term or even a semester for coursework submitted two-thirds of the
way through the course not to be returned until after exams. This is next
to useless for the purpose of guiding and improving learning. Providing
feedback on students' work is one of the most expensive components in
their education but it is often not an effective investment simply because
it happens too slowly. In the case above, students received feedback on
their problems at six points during the course, and only one hour after
submitting the problems for marking. The quality of feedback may be in-
cumstances like this be less important than its frequency and timing. But even;

The next principle involved here is that students pay attention to feed-
back which has a social dimension. By this I mean that students care what
others think about them. A piece of work submitted confidentially and
given a dreadful mark by a tutor they hardly know, may have little impact. A
face-to-face meeting with a tutor who they know socially, about the same
piece of work, is likely to have quite a different effect. And their peers and
friends, seeing and judging the same hopeless work, in public, in front of
others, is likely to have quite a dramatic impact. When students present work
on posters which are displayed on the walls of classrooms or laboratories,
and other students notice sloppy mistakes, slapdash presentation and shallow
background studying, the social pressure makes students pay attention in
ways which impersonal and confidential marking does not. In the case study,
the assessment changed from a context where poor work was hardly noticed,
even by the tutor, to one where a peer wrote comments all over your work,
knowing it was you.

The final principle here concerns the internalization of criteria for quality
and depends on what does the assessment. When academics submit an article
for publication in a journal they spend a considerable amount of time making
sure that, as far as they can ascertain, it is good enough for publication.
Rejection is embarrassing and wastes time so drafts are read and improved
several times before submission. Academics have a pretty shrewd understan-
ding of the standards required from having read many journal articles
and also from having acted as a referee for journals themselves. They have
internalized what the threshold standard consists of and are reasonably
good at judging when they have exceeded it. Students, in contrast, often
hand in work which they have not even glanced through. They have no
idea if it is good enough, no idea of the standard required and even if
they did, it would not have occurred to them to apply this standard to their
own work. After all, marking is what lecturers are paid for, right? When
students object to self-assessment or peer assessment it is often because they
do not understand the importance of internalizing standards in order to be
able to supervise one's own work. The significance of peer assessment in
this case study is likely to have been partly in the impact it will have had on
the quality of self-supervision. Because students learnt how to assess others'
problems, they learnt how to assess, and improve, their own, before they
submitted them.

The functions of assessment

From analysing this case it can be argued that assessment has six main
functions:

1. Capturing student time and attention.
2. Generating appropriate student learning activity.
3. Providing timely feedback which students pay attention to.
4. Helping students to internalize the discipline's standards and notions of
   quality.
5. Marking: generating marks or grades which distinguish between students
   or which enable pass/fail decisions to be made.
6. Quality assurance: providing evidence for others outside the course (such
   as external examiners) to enable them to judge the appropriateness of
   standards on the course.

Functions (5) and (6) are expensive to perform but this is not too much of
a problem because they need to happen only rarely. In many undergraduate
degree programmes it would be possible to predict final-degree classifications on the basis of about half a dozen carefully selected components of assessment, such as the final-year project or other large, complex open-ended tasks.

In practice, undergraduate students may be marked over a hundred times in three years, but most of this marking contributes little either to distinguishing between students or to quality assurance. An analysis of marks in a science faculty programme at Portsmouth University suggested that as little as 5 per cent of the separate assessments undertaken may be sufficient to produce exactly the same degree classifications for students. The sheer volume may instead trivialize the nature of assessment tasks and result in a poor quality of attention by students, marker and examiners alike — and at great cost.

In contrast, if learning is to be supported, functions (1—4) have to happen frequently: as frequently as possible. Alverno College in the USA uses assessment as a primary learning activity (Alverno College Faculty 1994). Assessment happens constantly, especially in class, but not for the purpose of grading. In the case study, functions (5) and (6) were performed only — in the exam. Functions (1) and (2) were performed every week as students tackled problem sheets. Functions (3) and (4) were performed six times during the course. Functions (1—4) were performed at a total cost of six administrator-hours in a lecture theatre. Because functions (5) and (6) need to be performed fairly, reliably and validly, they can be expensive. It matters little whether functions (1—4) are performed reliably. In the case study, student feedback could have been unfair or even plain wrong but still worked because it generated the learning activity and quality of attention required for learning. Performing functions (1—4) can therefore be cheap or, as in cases discussed below, even free.

Using tactics to implement assessment strategies

Two broad tactics for changing student learning behaviour are illustrated here with examples in the form of cases. The first tactic is to change the assessment method, for example by changing from assessing every lab report to only sampling them for assessment, as in the 'Case of the mechanical engineer'. The nature of the assignment remains largely unchanged, but the way students go about tackling it changes in quality as a result of some change in the assessment method. The second broad tactic involves changing the assignment or learning task. Here the assessment method, such as using an exam, is retained, but the nature of the questions used in the exam is changed in order to change how students prepare for it, as in the 'Case of the philosopher of education'.

Tactic 1: Change the assessment method

The case of the pharmacist

In a pharmacy course, students handed in lab reports every week. They made similar errors every week, despite careful marking and commenting, and the average marks for these lab reports increased only slightly, from about 5/10 to about 6/10 over the course of a semester. The time spent marking was substantial, about 20 hours a week, but seemed to have little impact on the quality of student work. The lecturer responsible for this course decided to introduce peer assessment — not for marks but for feedback. In the first week, he handed students several lab reports of mixed quality and asked them to mark and comment on them, without giving them any advice on how to do this. He then showed and explained his own marks, talked students through the marking scheme he used and asked them, in pairs, to re-mark the reports using his scheme. He then explained that from then on, every week, the first thing that would happen in each lab session is that each student would mark another student's lab report and hand it back immediately. Fifteen minutes were allowed for this. He sampled students' work and marked it himself to see if they were being rigorous. Their marks proved very accurate but, if anything, a little tough. The average marks went up to over 8/10 — an increase of 20 per cent as a result of the teacher not marking any more. These marks did not count towards course marks but the quality of reports, and presumably the quality of attention students paid to them, went up markedly. About 18 hours a week of marking time was saved. The purpose of the tactic of peer assessment here is to operationalize the strategy of getting students to internalize quality criteria and apply these criteria to their own and to others' work, in order to improve quality, in a way which tutor marking had failed to do.

The case of the mechanical engineer

On a practical engineering course, students undertook regular workshop-based practical work and wrote up this work in 25 reports. The marking load was very heavy and the quality of student work patchy, with crucial objectives concerned with communication skills, data handling and safety very poorly addressed. Regular marking was abandoned. Students were told that they had to hand in a complete portfolio of reports at the end of the year and that unless all 25 reports were present, they could not sit the exam. This solved the 'time on task' problem and made sure students did all the work. To ensure quality of effort as well as quantity, four of the reports were extracted from the portfolio at random and marked, and these marks counted towards the overall course marks. This ensured that students could not afford to drop their standards for any of their reports. Previously, so few marks were associated with each report that students did not care if they submitted the occasional weak report, but in the new regime they could lose 25 per cent of their coursework marks for a weak report. Sampling reduced total marking time to about 25 per cent of what it was previously.

What would have been lost by sampling like this was regular feedback — the course used a variety of economical feedback methods to give students various types of feedback on each report as it was written: model reports, oral feedback in a lecture on the basis of reading a sample of reports, peer feedback at the start of practical sessions, and so on.
The case of the accountant

An accountancy course was taught by lectures and assessed entirely by an end-of-course exam which contained questions on the material and procedures covered in the lectures. Despite the close matching of the exam to the lectures, student performance was extremely poor with a substantial minority failing both the exam and the re-sit exam and very few gaining high marks. The diagnosis was that students were not working regularly on the problems and methods explained in the lectures and were not getting feedback on their misunderstandings or mistakes. Regular tutor marking and feedback could not be afforded. The course adopted a method borrowed from a preclinical medical course at a nearby university. Students were formed into learning teams of four, allocated randomly. They were told that, although they would sit the exam on their own, they would be allocated the average mark of their team of four. Students were told of the positive impact of this method elsewhere and they approved of the change. Not trusting each other not to let others down, they all taught each other furiously, making sure that each of the other three in their group was completely on top of the content every week. Exam marks increased dramatically with few individual fail marks. Individually failing students had to re-sit an exam, but the re-sit mark still counted towards the group mark, so the other students tutored the failed student through the re-sit, and almost all passed at the second attempt. There were also many high marks — in fact, the changed grade distribution benefited the best students more than the poor students. The act of tutoring others greatly increased their learning and their marks. There were no changes in the lectures or in the exam and the innovation was at zero cost.

The tactic here was the use of learning teams and shared exam marks. The strategy was to capture enough learning time, distributed evenly across the course, to make the learning activity productive, and to provide regular feedback.

Tactic 2: Change the assessment task

The case of the philosopher of education

A philosophy of education module which was part of a Certificate in Teaching in Further Education course used a final exam in which students were asked questions in the form: ‘Compare and contrast the philosophies of X and Y in relation to classroom practice Z.’ Students who had diligently attempted to memorize features of each philosopher they had covered in the course duly listed several features of each, the bright ones spotted a difference and the really bright ones understood a practical implication. All students attempted to ‘fake good’ — to make out that they knew more philosophy than they really did. The main problem with this assessment is that it did not generate appropriate learning activity. As it was possible to pass the course by memorizing some factual details, this is all most students did. In lectures and in their reading they tried to spot the facts they should note down about each philosopher for later use. Attempting to show understanding was dangerous in that they could be wrong — so they played safe with facts. A new course leader transformed the course, not by changing the content or the teaching, but by changing the exam questions. Students were told that there would be two compulsory exam questions. In the exam, they would be shown a 10-minute video of a teacher in a further education classroom and asked to ‘Comment on what is going on in this class from a philosophical point of view’ and to ‘Advise this teacher on her future practice, from a philosophical point of view’. The same question was used every year. All that changed was what was on the video. One year it might illustrate issues of power and control, the next year issues of ethics, equality of opportunity, or whatever. There was no way a student could prepare for such an exam by memorizing facts about philosophers. The only sensible way to prepare was to look at what went on in classrooms from a philosophical point of view and to discuss and tune up this point of view by using ideas gleaned from the lectures and the reading. Students took themselves off to observe classrooms, borrowed videos of classrooms, and sat and discussed what they had seen with other philosophy students. The learning activity was then appropriate. The syllabus, lectures and reading list were all largely unchanged, but the learning outcomes were completely transformed. The tactic here was to change the exam question. The strategy was to use assessment to change the nature of student-learning activities to make them more appropriate.

The case of the Norwegian engineer

Engineering undergraduate courses are normally assessed in large part by a series of exams on specialist subtopics such as mechanics, materials, mathematics or management. Exam questions often relate closely to the type of problems students have tackled as they have progressed through the course. Students prepare for such exams by practising the problems on their problem sheets and in their lecture notes. Students tend not to practise tackling real-world complex problems of the kind engineers face, which involve mechanics, materials and management, all at the same time because — as students — they are rarely, if ever, tested in exams which span these topics. The result is that students memorize algorithms for predictable small-scale problems but tend not to learn how to tackle unpredictable large-scale problems such as those they will encounter in work, except perhaps in a final-year project. In a Norwegian engineering programme, the final exam consisted of one very large, complex real-world problem. Instead of each problem being able to be tackled in about 10 or 20 minutes, they had all day and were not expected to finish — they were assessed on how much progress they had made. In addition, they could take into the exam any kind of aid they liked. Professional engineers use computer programs which give equations, manuals, books, notes — in fact, every kind of support they could. They do not try and remember everything. So students were
allowed the same kind of aids, including their lecture notes, books, laptops, computers with any kind of software they liked, and so on. The results of such an exam is that students focus their revision and their preparation for an exam, not on how to tackle predictable problems from memory, but on how to prepare for unpredictable real-world problems, just like a practising engineer. The tactic was to change the exam and exam question. The strategy was to generate appropriate learning activity.

Planning strategic change

Throughout this chapter, the emphasis has been not so much on assessment methods and tasks per se as on their consequences for student learning. Students are tuned in to an extraordinary extent to the demands of the assessment system and even subtle changes to methods and tasks can produce changes in the quantity and nature of student effort and in the nature of learning outcomes out of all proportion to the scale of the change in assessment. In planning such strategic change, the following questions can help generate ideas and an appropriate focus of attention.

- How well are students currently performing, and what are they poor at?
- What do students currently do with their time out of class and do they spend enough time, distributed evenly enough?
- How is their learning behaviour influenced by the current assessment methods and tasks?
- In particular, are some aspects of learning behaviour dysfunctional as a by-product of the assessment?
- Do students gain the feedback they need on their progress and on their main learning activities, when they need it?
- How else might they gain useful feedback quickly enough and cheaply enough?
- How might students’ learning time be captured in sufficient quantity and with an appropriate distribution across the course, without increasing tutor effort, for example by introducing course requirements?
- What learning benefits might accrue from students doing some of the assessment for themselves and/or each other that teachers currently do for them?
- How could students be supported in internalizing what quality means in your context so that they actively review their own work rather than leaving such judgements to the tutor?
- How could social pressures be brought to bear to increase students’ sense of responsibility to others and their cooperation in learning?

Using these questions, assessment can be used strategically to change the way students learn.
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Conditions Under Which Assessment Supports Students' Learning

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ABSTRACT
Much evaluation of teaching focuses on what teachers do in class. This article focuses on the evaluation of assessment arrangements and the way they affect student learning out of class. It is assumed that assessment has an overwhelming influence on what, how and how much students study. The article proposes a set of 'conditions under which assessment supports learning' and justifies these with reference to theory, empirical evidence and practical experience. These conditions are offered as a framework for teachers to review the effectiveness of their own assessment practice.

Introduction
When teaching in higher education hits the headlines it is nearly always about assessment: about examples of supposedly falling standards, about plagiarism, about unreliable marking or rogue external examiners, about errors in exam papers, and so on. The recent approach of the Quality Assurance Agency (QAA) to improve quality in higher education has been to focus on learning outcomes and their assessment, on the specification of standards and on the role of external examiners to assure these standards. Where institutional learning and teaching strategies focus on assessment they are nearly always about aligning learning outcomes with assessment and about specifying assessment criteria. All of this focus, of the media, of quality assurance and of institutions, is on assessment as measurement. This article is not about measurement at all — it is about learning. The most reliable, rigorous and cheat-proof assessment systems are often accompanied by dull and lifeless learning that has short lasting outcomes — indeed they often directly lead to such learning. We are not arguing for unreliable assessment but we are arguing that we should design assessment, first, to support worthwhile learning, and worry about reliability later. Standards will be raised by improving student learning rather than by better
measurement of limited learning. This article is about how to design assessment that supports worthwhile learning. The case studies elsewhere in this issue are about particular assessment methods — tactics if you like. Guidance on how to implement a wide range of assessment tactics can be found elsewhere (e.g. Gibbs, 1995). This article is about strategy — about the functions that assessment performs (Gibbs, 1999) that enable a teacher to select appropriate assessment tactics. We will argue that assessment works best to support learning when a series of conditions are met. The article will examine the nature of these conditions.

The dominant influence of assessment

In the early 1970s researchers on both sides of the Atlantic (Snyder, 1971; Miller & Parlett, 1974) were engaged in studies of student learning at prestigious universities. What they found was that, unexpectedly, what influenced students most was not the teaching but the assessment. Students described all aspects of their study — what they attended to, how much work they did and how they went about their studying — as being completely dominated by the way they perceived the demands of the assessment system. Derek Rowntree stated that 'if we wish to discover the truth about an educational system, we must first look to its assessment procedures' (Rowntree, 1987, p.1). The Snyder and Miller & Parlett studies went further and highlighted the way students respond to these assessment procedures. More recently, qualitative studies have emphasized the importance of understanding the way students respond to innovations in assessment (Sambell & McDowell, 1998).

Snyder's work gave birth to the notion of the 'hidden curriculum' — different from the formal curriculum written down in course documentation, but the one students had to discover and pay attention to if they wanted to succeed:

'From the beginning I found the whole thing to be a kind of exercise in time budgeting ... You had to filter out what was really important in each course ... you couldn't physically do it all. I found out that if you did a good job of filtering out what was important you could do well enough to do well in every course.' (Snyder, 1971, pp.62-63)

Once students had worked out what this hidden curriculum consisted of they could allocate their effort with great efficiency:
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'I just don't bother doing the homework now. I approach the courses so I can get an 'A' in the easiest manner, and it's amazing how little work you have to do if you really don't like the course.' (Snyder, ibid., p.50)

Miller & Parlett focused on the extent to which students were oriented to cues about what was rewarded in the assessment system. They described different kinds of students: the 'cue seekers', who went out of their way to get out of the lecturer what was going to come up in the exam and what their personal preferences were; the 'cue conscious', who heard and paid attention to tips given out by their lecturers about what was important, and the 'cue deaf', for whom any such guidance passed straight over their heads. This 'cue seeking' student describes exam question-spotting:

'I am positive there is an examination game. You don't learn certain facts, for instance, you don't take the whole course, you go and look at the examination papers and you say 'looks as though there have been four questions on a certain theme this year, last year the professor said that the examination would be much the same as before', so you excise a good bit of the course immediately ...' (Miller & Parlett, 1974, p.60)

In contrast, these students were described as 'cue-deaf':

'I don't choose questions for revision — I don't feel confident if I only restrict myself to certain topics'

'I will try to revise everything ...' (Miller & Parlett, 1974, p.63)

Miller & Parlett were able to predict with great accuracy which students would get good degree results:

'... people who were cue conscious tended to get upper seconds and those who were cue deaf got lower seconds.' (Miller & Parlett, 1974, p.55)

Many students are perfectly capable of distinguishing between what assessment requires them to pay attention to and what results in worthwhile learning, as this postgraduate Oceanography student explained:
'If you are under a lot of pressure then you will just concentrate on passing the course. I know that from bitter experience. One subject I wasn’t very good at I tried to understand the subject and I failed the exam. When I re-took the exam I just concentrated on passing the exam. I got 96% and the guy couldn’t understand why I failed the first time. I told him this time I just concentrated on passing the exam rather than understanding the subject. I still don’t understand the subject so it defeated the object, in a way.’ (Gibbs, 1992, p.101)

Whether or not what it is that assessment is trying to assess is clearly specified in documentation, students work out for themselves what counts — or at least what they think counts, and orient their effort accordingly. They are strategic in their use of time and ‘selectively negligent’ in avoiding content that they believe is not likely to be assessed. It has been claimed that students have become more strategic with their use of time and energies since the 1970s and more, rather than less, influenced by the perceived demands of the assessment system in the way they negotiate their way through their studies (MacFarlane, 1992).

The role of coursework assignments

Students tend to gain higher marks from coursework assignments than they do from examinations (Eds: see James & Fleming, this issue, for a discussion on this topic). Chansarkar & Raut-Roy (1987) studied the effects of combinations of various forms of coursework with examinations. They found that all combinations of coursework of varying types with examinations produced better average mark rates than did examinations alone — up to 12% higher average marks. Gibbs & Lucas (1997) reported an analysis of marks on 1,712 modules at Oxford Polytechnic. Modules with 100% coursework had an average mark 3.5% higher than modules with 100% examinations, and there were three times as many failed students on modules where there were only examinations. There was a significant positive correlation between the proportion of coursework on a module and average marks ($r = +0.36, p<.0001$). Bridges et al. (2002) studied the differences in coursework and exam marks in six subjects at four universities. They found coursework marks to be higher by one third of a degree classification in English and History (similar to the Oxford Polytechnic finding) and higher by two thirds of a degree classification in Biology, Business Studies, Computer Studies and Law.
Students also prefer coursework. Starr (1970) reported that 90% of students from four departments preferred half or more of their marks to come from coursework and 56% preferred all their marks to come from coursework. Students consider coursework to be fairer than exams, to measure a greater range of abilities than exams and to allow students to organize their own work patterns to a greater extent (Kniveton, 1996).

Higher average marks and student preference would not count for much if coursework were inherently less valid as an assessment — but it is not. First, examinations are very poor predictors of any subsequent performance, such as success at work. A review of 150 studies of the relationship between exam results and a wide range of adult achievement found the relationship to be, at best, slight (Baird, 1985). For example, first degree results explain less than 10% of the variance in postgraduate performance (Warren, 1971).

Second, coursework marks are a better predictor of long term learning of course content than are exams. Conway et al. (1992) reported a study of the performance of psychology students on a range of tests of their understanding and recall of content of a cognitive psychology course taken many years before. They found that student marks on coursework assignments undertaken up to 13 years before correlated with these test scores while students’ original exam marks did not. Presumably the kind of learning that coursework involves has long term consequences while the kind of learning involved in revision for exams does not. Studies of surface and deep approaches to learning have shown similar results: that any positive impact on test results of students taking a surface approach in preparation for the test are very short-lasting (Marton & Wenestam, 1978).

Third, in experimental studies in which students have either studied exam-based or assignment-based courses, the quality of their learning has been shown to be higher in the assignment-based courses. For example Tynjala (1998) compared two student groups: the first group studied via conventional lectures, a text-book and an exam; the second group studied via assignments based on the text-book, discussion with other students about these assignments, and a course-work essay marked by the teacher. This second group then also took the exam so as to enable a comparison with the first group, even though they had not studied for the exam. The second group were found to place more emphasis on thinking and had developed more sophisticated conceptions of learning (see Säljö, 1982). In their exam answers they revealed more comparisons, more evaluations and more sophisticated structures to their answers.
in terms of the SOLO taxonomy of learning outcomes (Biggs & Collis, 1982). These results (achieved with less teaching) were interpreted in terms of the assessment requirements for the second group being more constructivist.

It is a common observation of higher education teachers that if coursework is taken away from a module due to resource constraints, students simply do not do the associated studying; for example students will rarely write unassessed essays. It is argued that you have to assess everything that moves in order to capture students' time and energy. However, coursework does not have to be marked to generate the necessary learning. Forbes & Spence (1991) reported a study of assessment on an engineering course at Strathclyde University. When lecturers stopped marking weekly problem sheets because they were simply too busy, students did indeed stop tackling the problems, and their exam marks went down as a consequence. But when lecturers introduced periodic peer-assessment of the problem sheets — as a course requirement but without the marks contributing — students' exam marks increased dramatically to a level well above that achieved previously when lecturers did the marking. What achieved the learning was the quality of student engagement in learning tasks, not teachers doing lots of marking. The trick when designing assessment regimes is to generate engagement with learning tasks without generating piles of marking.

The decline in formative assessment

A traditional characteristic of teaching in higher education in the UK has been the frequent provision of detailed personalized feedback on assignments. The archetype has been that of Oxford or Cambridge University where students wrote an essay a week and read it out to their tutor in a one-to-one tutorial, gaining immediate and detailed oral feedback on their understanding as revealed in the essay. This was almost the only teaching many Oxbridge students experienced; teaching meant giving feedback on essays. This formative assessment was quite separate from marking and at Oxford and Cambridge the only summative assessment often consisted of final examinations at the end of three years of study that had involved weekly formative assessment.

Few institutions have been able to match the quantity or quality of feedback provided by Oxford or Cambridge but the assumption for most has been that frequent assignments and detailed (written) feedback are central to student learning. Until quite recently, for example, many
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science courses involved weekly problem sheets and laboratory reports, all of which were marked by teachers and returned to students within the week. In most forms of distance education, feedback on frequent assignments is the main interactive component of teaching and the Open University has placed great emphasis on frequent assignments, training and paying tutors to provide comprehensive feedback, and monitoring the quality of this feedback. For some Open University students this is their only contact with their tutor. They can cope without much, or even any, face-to-face teaching, but they cannot cope without regular feedback on assignments.

Resource constraints in conventional universities have led to a reduction in the frequency of assignments, in the quantity and quality of feedback and in the timeliness of this feedback. Modularisation has tended to shorten courses and has reduced the timescale within which it is possible to set assignments and provide feedback, while increasing the number of examinations. Some courses have abandoned formative assignments altogether. Others may involve just one assignment but with feedback not being provided until very late in the course, or even after the exam. At the same time the diversity of students has increased enormously, so that previous assumptions of the level of sophistication of knowledge background, study skills, conception of learning (Säljö, 1982), or conception of knowledge (Perry, 1970) of students are now likely to be very wide of the mark. Far more guidance is likely to be required by these students who need more practice at tackling assignments and more feedback on their learning, not less. Because regular assignments and comprehensive feedback is understood to be central to distance education, it has in contrast largely been retained; as a result today's Open University students may receive fifty times as much feedback on assignments over the course of an entire degree programme as do students at conventional universities.

The effectiveness of feedback

In a comprehensive review of 87 meta-analyses of studies of what makes a difference to student achievement, Hattie (1987) reports that the most powerful single influence is feedback. Similarly, Black & Wiliam's (1998) comprehensive review of formative assessment emphasizes the extraordinarily large and consistent positive effects that feedback has on learning compared with other aspects of teaching. There have been many attempts both to understand the nature of this impact and to harness its power through innovation, at least in schools, as a consequence of this incontrovertible evidence.
In higher education, feedback to individual students in class must have declined significantly as class sizes have increased, though we have no evidence about this. Writing comments on assignments, however, remains a major component of teachers' workload in higher education. As class sizes have increased there have been some economies of scale in teaching (simply by packing more students into classrooms), but economies of scale are difficult to achieve for assessment: most assessment costs go up in direct proportion to the number of students. As a result, assessment costs can overtake teaching costs and teachers can find themselves spending much of their time marking. Is all this effort worthwhile?

In the Course Experience Questionnaire (Ramsden, 1991), used extensively in Australia and elsewhere to evaluate the quality of courses, the questionnaire item that most clearly distinguishes the best and worst courses is 'Teaching staff here normally give helpful feedback on how you are going' (Ramsden, 1992, p.107). This does not mean that higher education teachers in fact give helpful feedback — it means that whether or not they give helpful feedback makes more difference than anything else they do. How well does feedback actually work?

Maclellen (2001) surveyed 130 students and 80 lecturers at the University of Strathclyde about their perceptions concerning assessment. Amongst the 40 questions asked, four were about feedback and these revealed wide discrepancies between students and lecturers. While most teachers responded that feedback is frequently helpful in detail, frequently helps students to understand and frequently helps learning, most students responded that feedback was only sometimes helpful in these ways. 30% of students reported that feedback never helps them to understand. While 63% of lecturers responded that feedback frequently prompts discussion with a tutor, only 2% of students responded the same way and 50% of students responded that feedback never prompted discussion.

There may be a problem here with the quantity and quality of feedback such that it is not actually helpful to students — after all, teachers are under enormous time pressure and it is difficult to provide comprehensive and useful feedback under such circumstances. But there are other problems. Studies of what students do with feedback makes for depressing reading. Feedback is often not read at all (Hounsell, 1987) or not understood (Lea & Street, 1998). Wotjas (1998) reported:
'Some students threw away the feedback if they disliked the grade, while others seemed concerned only with the final result and did not collect the marked work.'

There is also a problem associated with both marks and feedback being provided. A grade is likely to be perceived by the student as indicating their personal ability or worth as a person as it is usually 'norm-referenced' and tells you, primarily, where you stand in relation to others. A poor grade may damage a student's 'self-efficacy', or sense of ability to be effective. Yorke (2001) elaborates on the positive or negative ways in which formative assessment can affect student retention and emphasizes its role in 'academic integration' (Tinto, 1993). In contrast, feedback on its own is more likely to be perceived as a comment on what has been learnt. In the absence of marks it has been reported that students read feedback much more carefully (Black & Wiliam, 1998) and use it to guide their learning. In the light of this (school-based) research evidence, some schools have adopted policies that all assignments should only have feedback and that no marks should be provided. The Alverno College 'assessment as learning' system is probably the best known higher education example of 'grade-less' assessment.

This is not a pretty picture. Assessment sometimes appears to be, at one and the same time, enormously expensive, disliked by both students and teachers, and largely ineffective in supporting learning. In the light of these problems the remainder of this article sets out and attempts to justify a set of 'conditions under which assessment can support learning'. The evidence is rarely conclusive enough to argue that if your assessment fulfils these conditions then learning will inevitably be more effective. They are offered as a plausible set of guidelines.

This is not the first attempt to identify such 'conditions' but is the first attempt in the context of higher education. School-based research has identified lists of effects of formative assessment such as the one below, based on Gagne (1977):

1. Reactivating or consolidating prerequisite skills or knowledge prior to introducing the new material
2. Focusing attention on important aspects of the subject
3. Encouraging active learning strategies
4. Giving students opportunities to practise skills and consolidate learning
5. Providing knowledge of results and corrective feedback
6. Helping students to monitor their own progress and develop skills of self-evaluation
7. Guiding the choice of further instructional or learning activities to increase mastery
8. Helping students to feel a sense of accomplishment.

(Crooks, 1988)

The conditions outlined here refer to two relatively distinct categories of influence:

- the influence of the design of assessment systems and assignments on how much students study, what they study and on the quality of their engagement
- the influence of feedback on learning.

Influences of assessment on the volume, focus and quality of studying

Condition 1

Sufficient assessed tasks are provided for students to capture sufficient study time

This issue concerns how much time and effort students allocate — the ‘time on task’ principle (Chickering & Gamson, 1987) that if students don’t spend enough time on something they won’t learn it. Berliner (1984), summarising research in the ‘time on task’ principle, concluded that there was strong empirical evidence of a direct relationship between time allocation by courses, student time management and actual student time on task, on the one hand, and student achievement on the other.

The relationship between effort and marks is not always straightforward. Kember et al. (1996) found that students’ perceptions of their effort depended on their motivation more than on the number of hours they actually allocated, and that it was possible for students to put in many hours unproductively, especially if they adopted a surface approach to their studies. Some kinds of assessment can generate long hours of ineffective memorization.
Courses in UK higher education are designed to involve a specified number of learning hours relating to the number of credits for the course. Students are normally expected to spend between about one and four hours out of class for each hour in class (depending largely on the discipline involved). Innis (1996) found students at Leeds Metropolitan University spend between 1.4 and 3.0 hours out of class for each hour in class. How much of this 'out of class' time is actually allocated to studying may be determined largely by assessment demands. In the USA, higher education students on average spend less than half as many hours out of class for each hour in class as teachers expect: between 0.3 and 1.0 hours out of class when teachers, on average, expect 2.1 hours out of class for each hour in class (Moffat, 1989; Hutchings et al., 1991; Gardiner, 1997; Brittingham, 1998). The emphasis in the USA on attempts to improve student performance through assessment is on 'classroom assessment' — activities undertaken in class to test students and use this assessment information to guide both students and teaching (Angelo & Cross, 1993). This focus on the classroom could be interpreted as a recognition of the failure to generate much out of class learning through the type of assessment they use. Diary studies (e.g. Innis, 1996) show how students in the UK allocate their time largely to assessed tasks and that this becomes a more narrow focus over time as they become more experienced students, allocating as little as 5% of their time to unassessed study tasks by year three.

Subject areas with less frequent assessed tasks (e.g. text-based subjects) have students who study fewer hours (Vos, 1991). Science and technology subjects that generate greater total study effort tend to have more frequent (though smaller) assessed tasks, such as problem sheets and laboratory reports.

Studies of the impact of students undertaking paid employment in parallel to full time study show that such students study fewer hours (Curtis & Shami, 2002) and perform significantly less well (Paton-Salzberg & Lindsay, 1993). Studies show that up to three quarters of full time students work during term time and they are likely to allocate their reduced study hours especially strategically in relation to assessment requirements. They report reduced reading and other out of class study activity.

Assignments are not the only way to capture student time and effort through assessment. The conventional way to do this is by having unpredictable sampling of course content in unseen examinations so that for a student to ignore anything is a high risk activity. The quality, quantity and distribution of the study effort captured in this way is somewhat unpredictable and probably varies with student perceptions of the likely exam demands and the risks involved.
Time and effort can also be captured through social pressure, for example:

- the potential embarrassment of the poor quality of your work being seen by colleagues, as when a seminar presentation is assessed, or when a laboratory report is written and displayed publicly in the form of a poster
- the potential censure from colleagues if a student were to fail to complete their component of an assessed group assignment.

**Condition 2**

*These tasks are engaged with by students, orienting them to allocate appropriate amounts of time and effort to the most important aspects of the course.*

This condition concerns what the effort is oriented towards and what quality of effort is involved. Students usually distribute their time unevenly across courses, often focusing on topics associated with assessment and nothing else. If they drew a graph of weekly study effort for all the weeks of an individual course involving a sequence of assignments, it might look more like the Alps than like Holland. Exams can have the effect of concentrating study into a short intense period at the end of the course with little study of, for example, lecture notes, until many weeks after the lecture. Frequent assignments (such as short problem sheets) or tests (such as computer-based assessment) can distribute student effort across the course, often on a weekly basis, while infrequent assignments (such as extended essays) may result in intensive studying for a week or two immediately prior to the assignment deadline, while topics not covered by the assignment can be largely ignored.

We know very little about the distribution of student effort and higher education teachers also tend to know little about what their students do with their time and when.

**Condition 3**

*Tackling the assessed task engages students in productive learning activity of an appropriate kind*

This issue concerns the kinds of study and learning activity involved in tackling the assignment or in preparing for tests. Some assessment generates unhelpful and inappropriate learning activity, even if it produces reliable marks. Studying for multiple choice question
Conditions Under Which Assessment Supports Students' Learning

(MCQ) tests can orient students to a surface approach (Scouler & Prosser, 1994; Tang, 1994; Scouler, 1998), as can exams, though the approach to learning of students may have as much impact as the form of test. Students may take a deep approach to preparing for MCQ tests and adopting effective study strategies even when the test only makes low level demands, and Macdonald (2002) has reported that at least some students adopted a deep approach to examination revision and learning effectively as a result of the integration of material that their revision involved.

Much assessment simply fails to engage students with appropriate types of learning. Submitting a laboratory report of a teacher-designed procedure is unlikely to help students to learn how to design experiments. Probably the only way to learn how to solve problems is to solve lots of problems. Probably the only way to gain facility with the discourse of a discipline is to undertake plenty of practice in using that discourse, for example through writing. Assignments are the main way in which such practice is generated. Students are unlikely to engage seriously with such demanding practice unless it is assessed, or at least required, by the assessment regulations. It seems unlikely that this student would write essays, and acquire the learning that resulted, without being required to:

'It's just work, in a way. Just all these essays, and reading's the worst part, it's just labouring really.' (History student) (Hounsell, 1987)

Some assessment can mis-orient student effort. Snyder (1971) described how students encouraged to be creative at Massachusetts Institute of Technology abandoned any such aspiration on discovering that most of the marks were derived from rote memorization of material for multiple choice tests. Some assignments create appropriate learning activity as a by-product. For example, setting essays can generate 'reading around' and can support the working up of coherent arguments in a way that simply asking students to read what is on the reading list does not. If you were to take the essay away, the appropriate form of studying would not occur even in the unlikely event of a similar volume of reading of similar material taking place. The product, the essay, and the marks associated with it, may be less important to the learning than the framework the assignment provides for the learning activities of 'reading around' and of 'constructing arguments'. Similarly, with laboratory reports or design briefs, the product may be less important than details of the studying required to fulfil the assignment requirements. Group projects can engage students in much discussion and confront individuals with
alternative views and different standards of work. The quality of the group product (such as a report) that is marked may be less important than the qualities of the learning process that created it.

Students can tackle assignments that are intended as learning activities so as to maximize the marks they obtain rather than maximising the learning achieved from engaging with the assignment. This may involve 'faking good' and pretending to be competent or knowledgeable, deliberately covering up misunderstanding and ignorance, telling teachers what they want to hear rather than what they as students believe, and so on. To some extent this is a consequence of the student's orientation, but assessment tasks, marking regimes and the way feedback functions can override such individual orientations and even encourage student behaviour that reduces learning. In the example below an intrinsically oriented student describes, in a learning log, the means he used to tackle assignments in Engineering in a way designed to obtain marks at the expense of learning:

'The average lecturer likes to see the right result squared in red at the bottom of the test sheet, if possible with as few lines of calculation as possible — above all else don't put any comments. He hates that. He thinks that you are trying to fill the page with words to make the work look bigger. Don't leave your mistakes, either, even corrected. If you've done it wrong, bin the lot. He likes to believe that you've found the right solution at the first time. If you're still making mistakes, that means you didn't study enough. There's no way you can re-do an exercise a few months after because you've only got the plain results without comments. If you have a go, you may well make the same mistakes you've done before because you've got no record of your previous errors.' (Gibbs, 1992)

The influence of feedback on learning

'Knowing what you know and don't know focuses learning. Students need appropriate feedback on performance to benefit from courses. In getting started, students need help in assessing existing knowledge and competence. In classes, students need frequent opportunities to perform and receive suggestions for improvement. At various points during college, and at the end, students need chances to reflect on what they have learnt, what they still have to learn, and how to assess themselves.' (Chickering & Gamson, 1987)
Conventional feedback is conceptualized as an issue of 'correction
of errors' (Bruner, 1974) or 'knowledge of results' in relation to
learning itself; if a student is informed that she is accurate then she
will learn. In this article we are concerned with how the provision
of feedback affects student learning behaviour — with how feedback
results in students taking action that involves, or does not involve,
further learning.

**Condition 4**

**Sufficient feedback is provided, both often enough and in
enough detail**

This issue concerns what is conventionally defined as formative
assessment: the impact on learning of feedback on progress, usually
provided after a 'performance' on an assignment. The volume and
thoroughness of feedback varies enormously between courses — we
suspect far more than the variation in quantity or quality of teaching.

This feedback may need to be quite regular, and on relatively small
chunks of course content, to be useful. One piece of detailed
feedback on an extended essay or design task after ten weeks of
study is unlikely to support learning across a whole course very
well. There has been very widespread adoption of computer-based
testing to provide at least some feedback on progress, and in some
assessment software it is possible to provide 'remedial feedback'
when incorrect answers are selected. Cook (2001) has reported that
students' final exam marks were closely related to the number (and
therefore frequency) of computer marked assignments students had
tackled. The frequency and speed of response of such feedback,
which is possible to provide reasonably economically, may compensate
for its relatively poor quality and lack of individualization.

Feedback has to be quite specific to be useful. The Open University
trains its 7,500 part time tutors to give quite detailed and extensive
feedback. Cole *et al.* (1986) list the characteristics of effective
feedback in distance learning and Roberts (1996) found that students'
preferences for feedback closely match this list. The specific forms of
feedback that are effective vary from discipline to discipline. Evidence
about the most effective forms of feedback in language learning,
for example, is summarized in Hyland (2001). In both Psychology
(Stephenson *et al.*, 1996) and Mathematics (Rice *et al.*, 1994)
students have been reported as wanting specific, detailed facilitative
feedback. Greer (2001) reports a study that illuminates exactly what
kind of impact feedback was achieving on the learning of Accountancy.
Much of the feedback to students provided in the rest of higher education would be picked up by the Open University's Staff Tutors (who monitor tutors' marking) as being totally inadequate and would lead to quality assurance and staff development interventions.

**Condition 5**

**The feedback focuses on students' performance, on their learning and on actions under the students' control, rather than on the students themselves and on their characteristics**

Literature on formative assessment distinguishes between feedback which tells students they are hopeless, or amongst the bottom 10% of students (a grade D, for example), and feedback which tells students exactly where they have gone wrong and what they can do about it. Grades without feedback may be particularly damaging. A focus of critical feedback on personal characteristics can be demotivating and can negatively affect students' 'self-efficacy' or sense of competence. This is important because self-efficacy is strongly related to effort and persistence with tasks (Schunk, 1984; 1985), predicts academic achievement well and is associated with adopting a deep approach to learning (Thomas et al., 1987). In contrast, feedback concerning content provides the student with options for action and is less closely associated with their ego — it is about their action rather than about themselves. Wootton (2002) has written passionately about the negative impact of assessment on 'at risk' students and asks whether the system exists 'to encourage learning or to measure failure'.

**Condition 6**

**The feedback is timely in that it is received by students while it still matters to them and in time for them to pay attention to further learning or receive further assistance**

This issue was highlighted in the 'seven principles of good practice in undergraduate education' (Chickering & Gamson, 1987; 1991). It is based on a range of studies of the timing of feedback (for summaries, see Dunkin, 1986; McKeachie et al., 1986). A teaching method which places great emphasis on immediate feedback at each stage of a student's progress through course units, the Personalised System of Instruction (PSI), has been demonstrated in many studies to improve student performance (Kulik et al., 1980).
Conditions Under Which Assessment Supports Students' Learning

If students do not receive feedback fast enough then they will have moved on to new content and the feedback is irrelevant to their ongoing studies and is extremely unlikely to result in additional appropriate learning activity, directed by the feedback. Due to resource pressures feedback is being provided more slowly and as courses in the UK are now shorter, this may mean that feedback on coursework is not provided until after the course has finished. Much such expensively provided feedback is likely to be wasted. There may be a trade off between the rapidity and quality of feedback so that, for example, imperfect feedback from a fellow student provided almost immediately may have much more impact than more perfect feedback from a tutor four weeks later.

Carroll (1995) described 'formative assessment workshops' for classes of 300 medical students which consisted of multiple choice question test items followed immediately by a short remedial tutorial on the question. There was no individualized feedback in this system but the feedback was very immediate and the workshop sessions were scheduled to allow students time to study more material before moving on to the next section of the course. 85% of students reported wanting more such sessions. Sly (1999) reported the impact of 'practice tests' on subsequent exam performance. Students had the option of taking a practice test, with computer-based feedback, sufficiently in advance of an exam to enable them to use the feedback to undertake some more studying to address their weaknesses. 197 weaker students chose to take these practice tests and these students improved their exam scores so much that they outperformed 417 stronger students. The benefits were still evident in a subsequent exam.

Condition 7
Feedback is appropriate to the purpose of the assignment and to its criteria for success

This issue concerns the relationship of feedback to what an assignment has been set for and what counts as a successful attempt at the assignment. Feedback can perform several functions. For example it can be used primarily to:

- correct errors
- develop understanding through explanations
- generate more learning by suggesting further specific study tasks
promote the development of generic skills by focusing on evidence of the use of skills rather than on the content

promote meta-cognition by encouraging students' reflection and awareness of learning processes involved in the assignment

encourage students to continue studying.

Which of these is appropriate depends on why the particular assignment was set in the first place. For example, was the intention to provide a single opportunity to practise the use of a procedure or algorithm in an accurate way, to provide one of many opportunities to practise in the use of a transferable skill, to offer a rich opportunity to reflect on learning, or to provide an easy first hurdle in a course that it would be motivating for a student to complete?

A recent study at the Open University suggested that maintaining motivation was the most important and influential issue for new students for their first assignment in a course (Gibbs & Simpson, 2002). If a student is looking for encouragement and only receives corrections of errors this may not support their learning in the most effective way.

Students need to understand why they have got the grade or mark they have and why they have not got a higher (or lower) grade. Criteria need to be explicit and understood by students, and demonstrably used in forming grades. Often criteria are not accompanied by standards and it is difficult for a student to tell what standard is expected or would be considered inadequate. Much of the literature on the use of self- and peer-assessment is about the reliability of such marking, and assumes that self- and peer-assessment is primarily a labour-saving device. But the real value may lie in students internalising the standards expected so that they can supervise themselves and improve the quality of their own assignments prior to submitting them.

Students need to understand criteria in order to orient themselves appropriately to the assignment ask. Penny & Grover (1996) have reported the extent to which students misunderstood the criteria to be used to assess their final year research project. The students expected criteria to be concerned with low-level goals such as style and presentation while their teachers emphasized high level goals such as theoretical and conceptual understanding. Opportunities to provide feedback at multiple stages during an ongoing project can re-orient student effort in appropriate ways (Carless, 2002).
Assessment also performs a role in conveying the standard that students have to aspire to. Conveying high expectations is one of the ‘seven principles of good practice in undergraduate education’ (Chickering & Gamson, 1987). Feedback, model answers and especially exemplars (Orsmond et al., 2002) help to establish these expectations and self-assessment helps students to internalize them.

**Condition 8**

**Feedback is appropriate, in relation to students’ understanding of what they are supposed to be doing**

**Students’ conceptions of the task**

Students have to make sense of what kind of a task they have been set when they tackle an assignment and what would count as a ‘good’ attempt at it. They can misunderstand and be confused by whatever briefing and feedback they have been given in the past, as in this example:

‘What do you think the tutor was looking for in this essay?’

Ah ... well!, this is confusing me. I know the tutor likes concise work, but doesn’t like generalisations, and doesn’t like too much detail, although on the whole I think he’d like more detail than generalisations. And because it was such a general question, I though ‘oh help!', I don’t know what he’s looking for.’

(Hounsell, 1987)

Whatever feedback this student’s tutor gives will be interpreted in the light of this student’s conceptions of what the tutor really wants or what the task really consists of. Students can have a great deal of difficulty understanding what form of communication an essay is (when the only audience knows more than they do about the topic), or what a laboratory report is for (when it has already been written hundreds of times before in exactly the same format), or what a design task has been set for (when only the product is assessed and not the learning that was involved in creating it). Many academic tasks make little sense to students. This inevitably causes problems when they come to read feedback about whether they have tackled this incomprehensible task appropriately.
Students' conceptions of learning

Underlying the above students' confusion about what the tutor really wants could be an unsophisticated conception of learning. Säljö (1982) describes students as having one of five conceptions of learning:

1. Learning as passive receipt of information
2. Learning as active memorization of information
3. Learning as active memorization of information or procedures, to be used at some time in the future
4. Learning as understanding
5. Learning as a change in personal reality: seeing the world differently.

A student with conceptions of learning 1, 2 or 3 might have trouble interpreting feedback that stated: 'Not enough discussion' if they had accurately provided the tutor with information they had diligently collected. Feedback needs to be sensitive to the unsophisticated conceptions of learning that may be revealed in students' work.

Students' conception of knowledge

Perry's 'scheme of intellectual and ethical development' describes how students develop over time, and through academic experience, their understanding of what knowledge itself is (Perry, 1970). He describes students as starting off thinking that there are an enormous number of right answers and that their job is to learn these and give them back to the teacher correctly. Perry describes this learning process with the memorable phrase 'quantitative accretion of discrete rightness'. He describes students as moving through a number of stages of increased understanding of the nature of knowledge involving, for example, extreme relativism, in which all answers are seen as equally right. A student who does not draw a conclusion to an essay may be leaving it up to the reader to decide, given that all conclusions are seen as equally valid. Feedback that simply read 'No conclusion' might not help such a student to progress! Teachers' feedback is often (though not always) generated from a more sophisticated epistemological stance than that of the student and this offers plenty of scope for misunderstanding of feedback or blank incomprehension.
Students' conception of the discourse of the discipline

Lea & Street (1998) describe a student who, after submitting an essay on a History course, received the feedback 'I like your conclusions to what is a carefully argued and relevant essay.' At the same time the student received feedback on an essay submitted on a parallel Anthropology course which was so critical of the student's ability to write a clear argument or produce a justified conclusion that they were advised to seek study skills counselling. Lea & Street interpret this as a consequence of Anthropology involving a very different form of discourse involving different forms of argumentation and use of evidence, as it was clearly not a case of generalized essay writing inadequacies. If the student did not understand the discourse of Anthropology and was unpractised in using it, then generalized essay writing advice was unlikely to be helpful, whether from the lecturer or from a study skills counsellor. Feedback needs to be sensitive to what kind of writing is expected and what students are likely to understand about it. In modular course structures it is common for students to cross disciplinary boundaries and have to cope with such differences in discourse. Science and Technology students often have particular difficulties with social science-type essays even if they can write in an articulate way in their own discipline, but there are also profound differences in discourse within the social sciences, for example between Sociology and Psychology, and within the Humanities, for example between History and Literature.

Similarly, Higgins et al. (2001) discuss the failures of communication that take place in feedback. They describe a case in which the tutor's entire feedback consisted of: 'A satisfactory effort. More critical analysis of key issues would have helped.' The student, who wanted to be better than 'satisfactory', was left frustrated by the poor quality of critical analysis by the tutor.

Condition 9

Feedback is received and attended to

A number of studies have described students receiving their assignment back, glancing at the mark at the bottom, and then simply throwing it in the bin, including all the feedback.

'Sometimes I do read the comments but I find that I'll never write the same essay again anyway .... I tend to ignore them in some ways, unless there is something very startling.'

(Hounsell, 1987)
Crooks (1988) has summarized a range of research on this issue; where marks on intermediate tests or coursework assignments count significantly towards final marks, students pay less attention to accompanying feedback. Jackson (1995) found that third year students were particularly likely only to look at the grade rather than at feedback on essays. He reported that students like to see the feedback, but more to assure them that their essay had been read carefully and marked fairly.

It is not inevitable that students will read and pay attention to feedback even when that feedback is lovingly crafted and provided promptly. Special steps may need to be taken to engage students with feedback, such as:

- asking students to specify, on their assignment, what they would like feedback on, and giving feedback on nothing else
- providing feedback but no marks, so that students have to read the feedback to get any idea how they are progressing
- requiring assignments to be self-assessed (without any marks being involved) so that students pay attention to whether teachers’ views correspond to their own. In a review of literature on self- and peer-assessment, Dochy et al. have reported that overt self-assessment has been shown to increase student performance (compared with a control group, in controlled studies) and increase students’ control over their learning strategies (Dochy et al., 1999)
- using two-stage assignments with feedback on the first stage, intended to enable the student to improve the quality of work for a second stage submission, which is only graded. Cooper (2000) has reported how such a system can improve almost all students’ performance, particularly the performance of some of the weaker students
- providing a grade only after self-assessment and tutor feedback has been completed. Taras (2001) reports the successful use of such a sequence as a component of summative assessments.

**Condition 10**

**Feedback is acted upon by the student**

This issue concerns the impact of feedback on future learning. Feedback may accurately correct errors but still lead to no change in the way a student goes about the next assignment or tackles any future learning task. This may occur for a variety of reasons:
feedback may come too late to be acted on by students

feedback may be backward looking — addressing issues associated with material that will not be studied again, rather than forward-looking and addressing the next study activities or assignments the student will engage with

feedback may be unrealistic or unspecific in its aspirations for student effort (e.g. 'read the literature' rather than 'for the opposite view, see Smith Chapter 2 pages 24-29')

feedback may ask the student to do something they do not know how to do (e.g. 'be more Sociological' or 'express yourself more clearly')

feedback may be context-specific and only apply to the particular assignment rather than concerning generic issues such as study skills or approaches that generalize across assignments

feedback may be discouraging and lead to less study effort rather than more

there may be no follow-up to check if students have taken any action, so students can ignore feedback with impunity.

Ding (1998) suggests that even if students read feedback comments, they do little with them. In contrast Brookhart (2001) found that successful students use both marks and feedback and actively self-assess, both to learn and to direct their future studying. The most important variables here may be, as so often, to do with the student rather than with the teacher. Teaching students to monitor their own performance is, in Sadler's theoretical analysis of the role of feedback, the ultimate goal of feedback (Sadler, 1989). Research on the impact of the use of 'classroom assessment' in college in the USA again and again stresses the impact not on the learning of specific content but on the development in students of 'meta-cognition' and the ability to gain control over their own learning (see Steadman, 1998, for a summary). Students are likely to need to be taught how to use feedback to develop meta-cognitive control (Sadler, 1998). Improved ability to learn may not have the effects hoped for, however. Ramsden et al. (1987), studying the impact of a 'study skills' programme designed to increase the extent to which students adopted a deep approach, found it actually achieved the opposite. Students' increased awareness enabled them to adopt a surface approach to a greater extent in order to meet the perceived low level demands of their courses' assessment! Again this illustrates the way students' perceptions of assessment influence their learning.
Conclusion

These 'conditions under which assessment supports learning' are in the process of being tested out in practice in the context of a large scale project starting with a study of assessment in science courses at two universities. Teachers of courses with a wide range of assessment practices are collecting evidence from their students about, for example, how they distribute their effort in relation to assessment demands, and how they respond to feedback. They are using this evidence to diagnose potential problems with their courses, making changes to the assessment to address these problems, and then evaluating whether the changes have had positive impacts on the ways their students go about their learning. This is much like any action research process involving the improvement of teaching, but with one major difference: the focus is not on teaching but on assessment. The starting assumption is that there is more leverage to improve teaching through changing aspects of assessment than there is in changing anything else and, at the same time, the teachers know less about how students respond to assessment than about anything else. As this project progresses, teachers' insights and evidence of effective changes to courses will lead to these 'conditions' being developed further. It is a large scale collaborative venture in the 'scholarship of assessment' that will lead both to case studies of changes that turned out to be effective but also to an elaborated conceptual framework that helps to explain why they were effective. The intention is that these conditions can be used as a checklist by any teacher wishing to review and make sense of the effectiveness of their own course's assessment system to support student learning.

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Conditions Under Which Assessment Supports Students' Learning


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Improving Student Learning
Theory, Research and Scholarship

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Measuring the response of students to assessment: the Assessment Experience Questionnaire

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Abstract

A review of literature on student assessment (Gibbs and Simpson, in press) has identified eleven conditions under which assessment supports student learning. A questionnaire has been developed to measure the extent to which assessment is experienced by students as meeting these conditions. Questionnaire items were generated, based on pilot interviews with students on a range of science courses, and on published accounts of student experience of assessment, to form a prototype Assessment Experience Questionnaire (AEQ). This prototype AEQ contains six scales.

1. Time demands and student effort
2. Assignments and learning
3. Quantity and timing of feedback
4. Quality of feedback
5. Use of feedback
6. The examination and learning

Each scale contains six items, addressing the eleven conditions.

This prototype has been administered to a total of 2,279 students on a wide range of courses at two universities. The AEQ is being used to diagnose where assessment could be modified to improve student learning. In a three year study, modifications will be made to assessment patterns on the courses being surveyed and the AEQ administered on the revised courses to monitor the impact of changes. The paper describes the theoretical and empirical basis of the prototype AEQ, its characteristics, and outlines plans for its further development.

Introduction

The research reported in this paper had two starting points. First, assessment is seen to exert a profound influence on student learning: on what students focus their attention on,
on their quality of engagement with learning tasks, and, through feedback, on their understanding and future learning. As students become ever more strategic, the way assessment influences learning becomes ever more central in determining student learning outcomes and performance. Second, there is currently no appropriate instrument available for reviewing the way assessment influences learning on a specific course, that teachers could use to evaluate the design of their assessment systems. The item on the Course Experience Questionnaire (CEQ) (Ramsden, 1991) with the largest correlation with student performance concerns tutor feedback. However the

<table>
<thead>
<tr>
<th>Quantity and distribution of student effort</th>
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<tbody>
<tr>
<td>Condition 1</td>
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<tr>
<td>Condition 2</td>
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<tr>
<td>Quality and level of student effort</td>
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<tr>
<td>Condition 3</td>
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<tr>
<td>Condition 4</td>
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<tr>
<td>Quantity and timing of feedback</td>
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<td>Condition 5</td>
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<td>Condition 6</td>
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<tr>
<td>Quality of feedback</td>
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<td>Condition 7</td>
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<td>Condition 8</td>
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<td>Condition 9</td>
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<tr>
<td>Student response to feedback</td>
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<tr>
<td>Condition 10</td>
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<tr>
<td>Condition 11</td>
</tr>
</tbody>
</table>

Table 1 Conditions under which assessment supports student learning

'S'Assessment' scale on the CEQ is concerned only with students' perceptions of the extent to which assessment orients them to take a surface or deep approach. While this is important it is only one of many influences of assessment on student learning. It is likely to be useful to be able to identify some of these other influences with a similar type of instrument as the CEQ. The Assessment Experience Questionnaire (AEQ) is being developed as a tool for teachers to diagnose how well the assessment on their course is supporting their students' learning, in order to be able to make principled changes to that assessment. The AEQ would then be re-administered in order to measure the extent of change, if any, in students' perceptions and responses.

The scales and items of the CEQ are based on empirical evidence, from qualitative and quantitative studies, concerning what features of course design relate to the extent to which students take a deep or surface approach to their learning. The items and scales of the AEQ are based on a much wider range of studies. The first stage of the development of the AEQ consisted of a literature review of ways in which assessment influences student learning (Gibbs and Simpson, in press). The review encompassed theoretical accounts of the way feedback works and of formative assessment in general, and also case study accounts of innovations in assessment that demonstrated improvements in student learning. The review identified a range of conditions under which assessment seems likely to support student learning, or obstruct or mis-orient learning. These eleven conditions are clustered under five headings in Table 1.

Condition 3 relates to the 'Appropriate Assessment' scale on the CEQ but refers directly to the kind of learning activity students engage in when undertaking assignments or preparing for exams, rather than only students' perceptions of the demands of assessment. Conditions 1, 4 and 6 are similar to three of the 'Seven Principles of Good Practice in Undergraduate Education' (Chickering and Gamson, 1991). Condition 7 is derived from research on formative assessment in schools (Black and Wiliam, 1998). Overall the conditions are derived from a range of types of research, using a range of methodologies, in a range on contexts. They are not only based on insights from phenomenographic research.

Development of the AEQ

The first stage in the development of the AEQ involved open-ended interviews with Open University students about their experience of assessment, undertaken by lecturers during face to face 'summer schools' at several locations nationally. The students came from a range of physics and chemistry courses. The interviewers attended a training session beforehand but there was no quality control over the interview process, and evidence from the interviews was not recorded or reported in a consistent way. The purpose was for the lecturers themselves to hear the kind of things that students said when describing their experience of assessment and to get a feel for the language students used. There were several surprises, for example:

- The extent to which some students were strategic – for example reading assignment questions first and then working back through course materials just for those
sections that helped with the assignments, rather than reading all of the material in the way the author intended
- Some students not reading tutors' feedback on assignments at all, because it did not help directly with the next assignment
- Some students reading feedback on assignments in order to help during revision for the exam, but not when it was originally returned
- Some students admitting to 'faking good' and tricking their tutor into believing that they had been studying hard and that they understood the material. It had originally been intended to develop a large set of potential questionnaire items relating to the eleven conditions and to trial them in order to build coherent factors and scales. However there was a pressing need to diagnose specific assessment problems on each course and to provide a 'before' measure that could be used as a baseline against which to measure the impact of any changes introduced into assessment. As a result a prototype version of the AEQ was quickly constructed. To reduce the total number of questionnaire items, related pairs of conditions were grouped into single sections of the questionnaire, each containing six questions. Because of differences in assessment patterns between courses (for example some having exams and some not), separate sections on exams and on assignments were used, instead of having a single section for conditions 3 and 4. The resulting prototype can be seen in Appendix 1 and its associated scoring sheet in Appendix 2. The combining of pairs of conditions into single sections turned out to be a mistake for some conditions, but not for others (see the Factor Analysis below).

Sample

Three student groups have been sampled using the prototype version of the AEQ.

1. 150 students on each of eight science courses at Institution A, a distance learning institution: a total of 1,050 (This is 150 students on 7 courses) students who were all part time and mature. The students were chosen randomly from large total cohorts. The AEQ was posted to students in a machine-readable form and posted back by students. There were 498 replies, a response rate of 47%.

2. Between 15 and 100 science students (depending on enrolment) randomly selected from each of seven science courses of varying enrolments at Institution B, a conventional face to face institution. The wording of some items on the AEQ needed to be modified in minor ways to make the questions relevant and comprehensible to conventional students. The total of 529 students were mainly full-time and 18-21 years old. There were 278 replies, a response rate of 53%.

The courses in samples 1 and 2 included physics, astronomy, chemistry and bioscience modules of 15, 30 or 60 credits (involving 150600 hours of student effort) and with a variety of patterns of assessment and types of coursework and end of course assessment or exam. The patterns of assessment in Institutions A and B, while they varied between courses, showed broad institutional characteristics:

- Assignments and in-course tests in Institution B were smaller in size, occurred closer together, and each assessed a smaller 'chunk' (in terms of student learning hours or course credits) than did assignments or in-course tests in Institution A.
- In Institution A there is a convention of eight assignments and an exam for 60-credit courses and four assignments and an exam for 30-credit courses, with little variation from this convention. In contrast assessment patterns and assignment types were more varied in Institution B, with some courses not using exams.
- Exams in Institution B were larger (longer in duration) in relation to course size (study hours and credit weighting) than in Institution A.
- Feedback to students in Institution A is largely through extensive written feedback on assignments, while in Institution B written feedback is less extensive, and oral and informal feedback, in and out of class, is much more frequent.

3. 700 distance learning students at University A. Only sections 3, 4 and 5 of the AEQ, concerning feedback, were used, as there was particular interest in this crucial component of distance education. The students were drawn randomly from 155 courses spread across all disciplines and academic levels. The questionnaire was delivered electronically via email, and only went to those students who had access to the internet. 434 questionnaires were returned, a response rate of 62%.

Analysis

Data from samples 1 and 2, from institutions A and B, were analysed separately as both the contexts and the students were markedly different. Mean scores both on individual items, and on scales, were different between the two samples, particularly for items and scales concerning the quantity and quality of feedback. Inter-institution differences were larger than inter-course differences within institutions, as shown in Table 2.

Table 2 Analysis of institutional and course contributions to variance in student responses:

<table>
<thead>
<tr>
<th>Institute</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1,762)</td>
<td>162.6</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Course</td>
<td>(12,762)</td>
<td>9.0</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

It appeared that there were institutional patterns in the way assessment regimes operated and that the students responded to these patterns in a broadly similar way regardless of the particular course context they were in. Specific institutional differences in student response, and their interpretation, have been reported elsewhere (Gibbs et al 2003).

However, separate factor analyses of samples 1 and 2 showed very similar patterns and so the data was combined for the purposes of factor analysis. Principal Component Analysis with Varimax Rotation with Kaiser Normalisation was conducted on the AEQ data from the combined sample of 731 students. Six factors emerged which together...
explained 50% of the variance. These factors do not correspond in a straightforward way with the sections of the AEQ. This relative lack of correspondence was confirmed by low Cronbach Alpha reliability coefficients for some of the scales. These are shown below in Table 4.

Table 3 shows the items organised under the six sections of the AEQ. Only factor loadings of greater than 0.4 have been included. The six factors have now been labelled:

1. Quality of feedback
2. Use of feedback
3. Focus on assignments
4. Learning from the exam
5. Distribution of effort
6. Approach to the exam

This analysis is interpreted to indicate that:

- students do not make fine distinctions between quantity, timing and quality of feedback (factor 1, items in sections 4 and 5 on the AEQ) but respond broadly positively (or negatively) to all features of feedback in a similar way;

<table>
<thead>
<tr>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section 2 Time demands and distribution of effort</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I do the same amount of studying each week regardless of whether an assignment is due*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.57</td>
</tr>
<tr>
<td>I can be quite selective about what I study and still do well*</td>
<td>+0.56</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I only study things that are going to be covered in the assignments*</td>
<td>+0.57</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I have to study regularly if I want to do well on the course</td>
<td>-0.60</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>On this course it is possible to do quite well without studying much*</td>
<td>+0.55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In weeks when assignments are due I put in many more hours</td>
<td>+0.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Section 3 Assignments and learning</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Tackling the assignments really makes me think</td>
<td>+0.45</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I learn more from doing the assignments than from studying the course material</td>
<td>+0.49</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>In completing the assignments you get away with not understanding and still get high marks*</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The assignments give very clear instructions about what you are expected to do</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When I tackle an assignment it is not at all clear what would count as a successful answer*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The assignments are not very challenging*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.44</td>
</tr>
</tbody>
</table>

| **Section 4 Quantity and timing of feedback** | | | | | | |
| On this course I get plenty of feedback about how I am doing | | | | | | -0.72 |
| The feedback comes very quickly | -0.69 |
| There is hardly any feedback on my assignments when I get them back* | +0.76 |
| When I get things wrong or misunderstand them I don't receive much guidance in what to do about it* | +0.77 |
| I would learn more if I received more feedback* | +0.64 |
| Whatever feedback I get comes too late to be useful* | +0.73 |
| **Section 5 Quality of feedback** | | | | | | |
| The feedback mainly tells me how well I am doing in relation to others* | | | | | | |
| The feedback helps me to understand things better | -0.58 |
| The feedback shows me how to do better next time | -0.53 |
| Once I have read the feedback I understand why I got the marks I did | -0.68 |
| I don't understand some of the feedback* | +0.63 |
| I can seldom see from the feedback what I need to do to improve* | +0.71 |
| **Section 6 What you do with the feedback** | | | | | | |
| I read the feedback carefully and try and understand what the feedback is saying | +0.58 |
| I use the feedback to go back over what I have done in the assignment | +0.70 |
| The feedback does not help me with subsequent assignments* | -0.47 |
| The feedback prompts me to go back over material covered earlier in the course | +0.69 |
| I do not use the feedback for revising* | -0.57 |
| I tend to only read the marks* | -0.47 |
| **Section 7 The examination and learning** | | | | | | |
| Preparing for the exam was mainly a matter of memorising* | +0.65 |
| Doing the exam brought things together for me | +0.83 |
| I learnt new things while preparing for the exam | +0.74 |
| I understand things better as a result of the exam | +0.86 |
| I'll probably forget most of it after the exam* | +0.42 |
| In the exam you can get away with not understanding and still get good marks* | +0.46 |

| % variance | 17% | 9% | 8% | 6% | 5% | 5% |

Table 3 Factor analysis of combined data from Institution 1 and Institution 2

Items marked * are negatively scored
students do distinguish between the quality of the feedback and the extent to which they do anything with this feedback (Factor 2, including items from Section 6 of the AEQ);

- students distinguish between two different kinds of distribution of effort: being selective about what to study in relation to assessment demands (Factor 3) and studying different amounts in different weeks in relation to the timing of assessment demands (Factor 5);

- students distinguish between two different aspects of examinations (items from Section 7 of the AEQ): the extent to which preparation for the exam and tackling the exam resulted in useful new learning (Factor 4) and the extent to which examinations were perceived only to involve memorisation (Factor 6).

The lack of coherence of some of the Sections of the AEQ was confirmed by calculation of reliability coefficients for the six items in each Section. As can be seen in Table 4, sections 1, 2 and 6 do not have satisfactory levels of internal reliability.

<table>
<thead>
<tr>
<th>Section</th>
<th>Cronbach Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Time demands and distribution of student effort</td>
</tr>
<tr>
<td>2</td>
<td>Assignments and learning</td>
</tr>
<tr>
<td>3</td>
<td>Quantity and timing of feedback</td>
</tr>
<tr>
<td>4</td>
<td>Quality of feedback</td>
</tr>
<tr>
<td>5</td>
<td>Use of feedback</td>
</tr>
<tr>
<td>6</td>
<td>The examination and learning</td>
</tr>
</tbody>
</table>

Table 4 Internal reliability of AEQ scales and sample items

An identical form of factor analysis to that carried reported in Table 3 was conducted on the same kind of data from sample 3 (where only sections 3, 4 and 5 of the AEQ were used) and resulted in four factors emerging which together explained 61% of the variance (see Table 5).

The first two factors, together explaining 41% of the variance, were almost identical to Factors 1 and 2 identified above from the use of the complete AEQ (see Table 3). These two factors concerned the quality of feedback and the use of feedback. These factors emerged in the same way despite the very different sample who were mainly not science students. The third factor was concerned with the timing of feedback (which did not emerge as a separate factor in samples 1 and 2) and the fourth factor was less coherent.

**Conclusions**

1. Students' response to the quality and use of feedback emerged as the most important aspect of students' response to assessment, accounting for 26% of the variance in sample 1 and 2 combined, and 41% of the variance in Sample 3.
2. Students did not consistently distinguish between different characteristics of the feedback itself (its quantity and qualities).
3. Students did distinguish between the feedback itself and what they do with it.
Institutional contexts, that set the framework for the broad pattern of students’ experience of assessment, had a very significant influence on students’ response to assessment, to a greater extent than did course contexts.

Despite these institutional differences, and the different types of students in the two institutional contexts studied, the same factors emerged from analysis of students’ responses to questionnaire items in the two institutions.

In Institution A the same factors (concerning feedback) emerge from student responses in discipline areas other than science.

The prototype AEQ needs to be developed into a working version in which scale scores are more meaningful because they are supported by more coherent underlying factors. New scales and some new items are required. Despite the somewhat muddled relationship between the structure of sections on the prototype AEQ and the structure of the factors that emerged from factor analysis, teachers have been able to interpret item and scale scores and use them to diagnose issues of concern that they were not previously aware of, that would benefit from attention. There are currently three follow-up studies under way at Institution A: Concerning what aspects of feedback students do and do not make use of. Tutors are coding each others’ feedback on assignments and then interviewing each others’ students about what, exactly, they do with each category of feedback. Students’ use of model answers will also be explored. The intention is to revise tutor briefing and monitoring so as to orient tutor behaviour towards more useful forms of feedback.

Concerning the impact on students’ studying, and on their revision, of the way they interpret the demands of different kinds of exam. Tutors are interviewing their own students and then an examinations questionnaire will be developed to measure the extent to which different categories of response are evidence on courses with very different exam demands. The aim is to modify exam demands and to articulate their intended demands more clearly.

Concerning students’ reasons for use of online practice assessments in an online maths course in which only those students who tackle the practice assessments, and start early, appear to pass the course. In Institution B teachers are exploring the way students respond to and use all kinds of feedback, not just formal written feedback on assignments. They are developing a questionnaire which identifies both possible sources of feedback (such as question answering in lectures and guidance during laboratory sessions) and possible forms of impact (such as clarifying goals or correcting mistakes). The aim is to identify which sources of feedback are effective and ineffective at achieving various impacts, with the aim of changing the ways in which feedback is provided. All three of these studies have been prompted by teachers’ interpretations of data from the prototype AEQ, though usually by identifying atypical patterns of response to individual items rather than atypical scale scores.

On the basis of the above factor analyses the prototype AEQ will be developed in the following way into a working version which will contain seven scales:

1. Consolidating a single scale, concerned with the quality of feedback, combining the best discriminating items from sections 3 and 4
2. Consolidating a scale based on section 5, on use of feedback
3. Consolidating a scale on distribution of effort, using items from Section 2, and new items
4. Developing a new scale, concerning focus on assignments, combining selected items from section 1 and 2
5. Developing a new scale on timing of feedback with items from section 4 and additional items
6. Developing a new scale on learning from the exam, with items from section 7 and additional items
7. Developing a new scale on approach to learning (in relation to assessment, both exams and coursework) drawing on ‘appropriate assessment’ items from the CEQ and items from sections 2 and 7.
8. Developing a new scale on clear goals and standards, based on the CEQ

It is intended to make this revised AEQ freely available for use by teachers and researchers exploring assessment and learning.

References


Acknowledgement

This research reported in this paper is part of the ‘FAST’ project (Formative Assessment in Science Teaching) which is in receipt of £250,000 from the Higher Education Funding Council for England. Their support is gratefully acknowledged.
Appendix 1: Assessment Experience Questionnaire (AEQ)

Please answer every item quickly by giving your immediate response. Circle the appropriate code number to show your response to assessment.

1. Amount and distribution of study effort

I do the same amount of study each week, regardless of whether an assignment is due or not. 1 2 3 4 5
I can be quite selective about what I study and learn and still do well. 5 4 3 2 1
I only study things that are going to be covered in the assignments. 5 4 3 2 1
I have to study regularly if I want to do well on the course. 1 2 3 4 5
On this course, it is possible to do quite well without studying much. 5 4 3 2 1
In weeks when the assignments are due I put in many more hours. 5 4 3 2 1

2. Assignments and learning

Tackling the assignments really makes me think. 1 2 3 4 5
I learn more from doing the assignments than from studying the course material. 1 2 3 4 5
In completing the assignments you can get away with not understanding and still get high marks. 5 4 3 2 1
The assignments give very clear instructions about what you are expected to do. 1 2 3 4 5
When I tackle an assignment it is not at all clear what would count as a successful answer. 5 4 3 2 1
The assignments are not very challenging. 5 4 3 2 1

3. Quantity and timing of feedback

On this course I get plenty of feedback on how I am doing. 1 2 3 4 5
The feedback comes back very quickly. 1 2 3 4 5
There is hardly any feedback on my assignments when I get them back. 5 4 3 2 1
When I get things wrong or misunderstand them I don’t receive much guidance in what to do about it. 5 4 3 2 1
I would learn more if I received more feedback. 5 4 3 2 1
Whatever feedback I get comes too late to be useful. 5 4 3 2 1

4. Quality of feedback

The feedback mainly tells me how well I am doing in relation to others. 5 4 3 2 1
The feedback helps me to understand things better. 1 2 3 4 5

5. What you do with the feedback

I read the feedback carefully and try to understand what the feedback is saying. 1 2 3 4 5
I use the feedback to go back over what I have done in the assignment. 1 2 3 4 5
The feedback does not help me with any subsequent assignments. 5 4 3 2 1
The feedback prompts me to go back over material covered earlier in the course. 1 2 3 4 5
I do not use the feedback for revising. 5 4 3 2 1
I tend to only read the marks. 5 4 3 2 1

6. The examination and learning (only to be completed if there is an exam)

Preparing for the exam was mainly a matter of memorising. 5 4 3 2 1
Doing the exam brought things together for me. 1 2 3 4 5
I learnt new things while preparing for the exam. 1 2 3 4 5
I understand things better as a result of the exam. 1 2 3 4 5
I’ll probably forget most of it after the exam. 5 4 3 2 1
In the exam you can get away with not understanding and still get good marks. 5 4 3 2 1

Comments you would like to make about the way the assessment affected your learning on the course:
Appendix 2: Assessment Experience Questionnaire
scoring sheet

Write in the numbers circled for each question and add the scores for each scale.

<table>
<thead>
<tr>
<th>1. Amount and distribution of study effort</th>
<th>2. Assignments and learning</th>
<th>3. Quantity and timing of feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

1. Amount and distribution of study effort
A high score indicates that students study evenly across weeks and across topics, and feel that they have to in order to do well. A low score indicates that students' study effort is allocated narrowly to assessed topics and those weeks where assessment takes place, and feel they can get away with this and still do well.

2. Assignments and learning
A high score indicates that students see assignment requirements as clear and challenging, requiring understanding. A low score indicates that assessment demands are perceived as unclear and that assignments are seen as unchallenging and as not requiring understanding.

3. Quantity and timing of feedback
A high score indicates that students perceive that they get plenty of feedback fast enough. A low score indicates that students perceive the feedback to be insufficient to support their learning, and too late to be useful.

4. Quality of feedback
A high score indicates that students find the feedback understandable and useful, explaining grades, misunderstandings and how to improve. A low score indicates that the feedback is neither comprehensible nor useful, and only indicates how well the student is doing in relation to others.

5. What you do with the feedback
A high score indicates that students use the feedback to guide follow-up learning, to tackle subsequent assignments differently, and to revise. A low score indicates that the feedback has little impact on subsequent studying and learning.

6. The examination and learning
A high score indicates that the perceived exam demands had a positive influence on the quality of learning undertaken during the course and during revision and that the exam itself was a learning experience. A low score indicates that the perceived exam demands encouraged memorisation and subsequent forgetting.
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Since 1972 Higher Education has followed education in universities, technical colleges, polytechnics, adult education institutes, specialist institutions and many other research institutes throughout the world. Contributions have come from authors in many different countries, though an appropriate strong contribution has come from North America. Articles have tackled the problems of teachers as well as of students, of planners as well as administrators, and have reviewed long-standing systems as well as new ideas for the future.

Each country may have a different educational system, but it is clear that the critical issues in higher education are shared by researchers and teachers throughout the world. Higher Education offers the opportunity for an exchange of research results, experience and insights, and provides a forum for discussion between experts.

Higher Education publishes authoritative overview articles, comparative studies and analyses of specific problems. Every issue contains an extensive book review section and each volume ends with indexes.
Institutional learning and teaching strategies in English higher education

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Abstract. In 1998 the Higher Education Funding Council for England (HEFCE) commissioned a survey of the extent to which institutional learning and teaching strategies were being used in English higher education. The survey was seen by HEFCE as a necessary precursor to the enactment of its policy decision to allocate a component of institutional funding on the basis of the possession of (and subsequent activation of) an institutional learning and teaching strategy. Responses from 116 institutions showed considerable variation in the extent to which they had developed a strategic approach to learning and teaching.

Over the coming years there is likely to be a marked increase in the level and sophistication of strategic planning to develop learning and teaching across whole institutions. The article concludes by drawing upon the organisational development literature to suggest some ways in which this shift might be facilitated.

Introduction

Over the past forty years, four broad but overlapping phases can be identified in efforts to improve teaching within institutions in England.

1. Up to 1980

Although there had been expansion in UK university higher education following the Robbins Report of 1963, and the polytechnics had been designated at the turn of the decade, patterns of learning and teaching in English higher education had been relatively stable. It was rare for departments to plan change across courses and even rarer for institutions to attempt to bring about change except in small scale and short-term ad hoc projects. Efforts to improve teaching had been largely the responsibility of individual lecturers and concentrated on classroom practice: they tended to be private, focused on the needs perceived by individual members of staff, and unevaluated. Given
the relatively stable context at that time, the task facing institutions was one of gradual quality improvement of a well tried educational model rather than the adoption of new models, and institutions may not have needed to be more strategic than to give evolution a little encouragement.

2. During the 1980s

During the 1980s the polytechnics and colleges experienced changes which were more marked than those in the universities. There were rapid increases in student numbers, reductions in real terms in funding per student, and an increase in the variety of students. Traditional teaching methods were not well suited to coping with these changes. The main (implicit) strategy was simply to work harder and to stretch traditional models to their limits rather than to change the educational model or to change goals. In terms of efficiency this was a very successful strategy, but in terms of effectiveness it was less successful: students performed less well in large classes (Gibbs et al. 1996) especially where methods had not changed (Lucas et al. 1996).

Many such institutions set up educational development units or similar central agencies and gave them a general dispensation to encourage change. However, these units tended to work with individual teachers rather than with the institution as a whole and were rarely involved in central policy-making or decision-making.

Where strategic developments were undertaken in the then universities, these tended to take place at departmental (rather than institutional) level, reflecting the greater level of autonomy accorded to departments.

3. The late 1980s to mid-1990s

In the late 1980s the Enterprise in Higher Education initiative began its programme of funding about 50 institutions to instigate institution-wide change, and in particular to reorient their goals to give a greater emphasis to student employability. In practice, most of the more than £50m funding involved was used to support innovation and in an ad hoc way, building on enthusiasms and opportunities within institutions rather than drawing upon considered engagement by senior management. Only a minority of institutions adopted institution-wide strategic approaches to change or embed changes in structures or quality assurance systems.

Much of the externally-funded activity stopped when the funding stopped, though some institutions turned their ‘Enterprise Offices’ into educational development units which they funded themselves. Educational development units and computer assisted learning centres were rarely aligned with institutional policy or goals.
4. The 1990s

The continued increases in student numbers and proportionately even greater increases in class sizes, especially in new universities, eventually had a marked impact. The solutions to the problems of numbers were often beyond the resources of most individual teachers and even of most departments. Investment in 'learning resource centres' was seen as necessary to support the increased quantity of independent learning time as class contact hours were reduced and traditional libraries found it difficult to cope with student demand. Institutions needed to find ways of reconfiguring personal tutor support systems which could not be staffed as they had been. Automated computer-marked assessment systems offered the prospect of coping with some components of marking loads.

More of teachers' time was required to redesign courses into completely new formats or to act as change agents within departments, and this required new rules for calculating duties, new teaching roles or new reward mechanisms, to engage academics with these new tasks. Modularisation and semesterisation required the wholesale re-writing of curricula and module descriptions and the opportunity was often taken to steer this redesign centrally and to require new forms of course specification in documentation, for example involving learning outcome statements. None of this had been necessary in the 1980s and little of this could be achieved without central planning, policy and top-sliced resources. By the mid 1990s several institutions with resource problems (and, consequently, challenges to quality) had developed institutional learning and teaching strategies and were learning how to implement them. By the late 1990s some institutions from across the higher education spectrum had also started developing a strategic approach to the enhancement of learning and teaching.

At the beginning of the decade the MacFarlane Report (CSUP 1992) had highlighted the need for a "detailed teaching and learning strategy linked to an institutional plan" if the potential to exploit information technology was to be harnessed for learning. Whilst the MacFarlane proposals were not without their critics (see, for example, Hartley 1995; Yorke 1994) information technology was coming to play an increasing part in learning and teaching. IT systems had grown unsystematically, with departments using different and incompatible hardware or software systems, and the costs and technical challenges regarding their use eventually led to more centralised planning and investment.

In the 1990s the move towards a more strategic approach by institutions had been given a push by external forms of appraisal such as the Research Assessment Exercise (RAE) and Teaching Quality Assessment (TQA). The early rounds of the RAE tended to be handled at departmental level. However,
by the late 1990s institutions had learned to become much more strategic in their investment in, and reorganisation of, departments, in order to maximise the strength of their research profile (HEFCE 1997a). Problems identified as institution-wide as a result of TQA were initially less likely to receive attention and action than those relating to departments (HEFCE 1997b). However the repeated identification of quality problems which required institutional action (such as poor libraries, a lack of support for the increasing number of part-time teachers, or the need for greater support for students with special learning needs) has in many cases led to institutional change and a more strategic perspective.

The increased use of strategic planning was not, of course, restricted to learning and teaching. Corporate planning, whether genuinely strategic or not, had already taken hold for other aspects of institutional management. For example the HEFCE had successfully helped institutions in England to be more strategic in their management of estates. HEFCE had also sponsored a workshop oriented towards learning and teaching a decade hence, the trigger for this being the need for institutions to look ahead strategically towards a time when traditional models of teaching would be unlikely to be sustainable (for the report of this event, see Yorke et al. 1996). Although primarily concerned with the standard of management in Australian universities, a similar concern for the changing nature of the role of the academic had also been expressed in the *Higher Education Management Review* (Hoare 1995, pp. 29ff).

During the 1990s strategic efforts had been made in the UK to improve teaching and learning, the EHE initiative being notable in this respect (though the heart of the initiative, 'enterprise', proved to be a more plastic concept than its proponents probably expected). Some initiatives which had a strategic rationale became in practice a series of relatively unconnected projects. A problem found quite often with initiatives was that activity and change came to a halt as soon as external funding ceased, because they had not been embedded in institutional policies, structures or activities. Exceptions to this general pattern occurred when a determined effort was made to use the project as a springboard for sustained activity. A notable example is the HEFCE-funded *Sharing Excellence* project at Nottingham Trent University which has led to a range of intra-institutional developments including the establishment of nine principal lectureships in teaching and learning.
Moves towards a national strategy

In anticipation of the findings of the Dearing Report (1997) the HEFCE commissioned the first author to draft a ‘Teaching and Learning Strategy for Higher Education’ (Gibbs 1997) the goals of which were stated as:

- to increase the priority placed by institutions and subjects on teaching;
- to increase the rate of development of teaching to meet the demands of a changing context;
- to establish public and government confidence in the quality of teaching in higher education and hence their commitment to investment in teaching.

A key proposal in this strategy was the use of funding and other incentives to encourage institutions to develop and implement comprehensive learning and teaching strategies. Incentive funding had for some time been used in the US to drive particular initiatives forward, particularly in the state of Tennessee where the intended impact was broader than most (for a summary, see Yorke 1996). In Australia, government intervention and funding policy had succeeded in encouraging institutions to introduce a range of more strategic change mechanisms which they continued to develop and implement after funding ceased (Candy and Maconachie 1998).

The Dearing Report (NCIHE 1997) had recommended that institutions develop learning and teaching strategies, and by mid-1998 it was clear to most institutions that they might be expected to develop such a strategic approach to institution-wide development of learning and teaching. It was against this background that the HEFCE commissioned a survey of current practice in the development and use of institutional learning and teaching strategies in December 1998 (Gibbs 1999). This paper reports the findings of the survey. Following the survey a proposal for a learning and teaching component in English funding policy was adopted in HEFCE Circular 99/26 and developed in Circular 99/48.

Method

A letter was sent by HEFCE to the Vice Chancellor or Principal of 134 higher education institutions in England asking him or her to submit whatever current documentation they had concerning their institutional learning and teaching strategy. Institutions were also asked to completed a short questionnaire.

Replies were received with accompanying documentation from 116 institutions, a response rate of 87%. About 20% of institutions were contacted by telephone to discuss particular aspects of their learning and teaching strategy.
Survey of Institutional Learning and Teaching Strategies

Q1. Please tick all boxes which apply.

☐ Our institution has a Learning and Teaching strategy. I enclose two copies.

☐ (If your institution has a Learning and Teaching Strategy) Our institution has a process for managing the implementation and monitoring of its Learning and Teaching strategy. I enclose two copies of documentation about that process.

☐ Our institution has some or most of the elements of a Learning and Teaching strategy, but they are not pulled together into a single statement. I enclose two copies of the following relevant documentation. (Please write in titles of documentation below)

☐ Our institution is in the process of developing a Learning and Teaching strategy. I enclose two copies of draft documents.

☐ Our institution has been through, or is going through, a process of creating, negotiating and gaining staff commitment to a Learning and Teaching strategy. I enclose two copies of documentation describing that process.

☐ Our institution does not have a Learning and Teaching strategy and is not developing one.

Q2. Nominated contact to take part in a short telephone interview about institution's Learning and Teaching strategy:

Figure 1. The questionnaire used in the survey.

<table>
<thead>
<tr>
<th>Category of institution</th>
<th>'Old' Universities</th>
<th>'New' Universities</th>
<th>Colleges and Institutes of HE</th>
<th>Creative Arts and specialist Colleges</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of institutions</td>
<td>51</td>
<td>38</td>
<td>30</td>
<td>15</td>
<td>134</td>
</tr>
<tr>
<td>Number of respondents</td>
<td>48</td>
<td>34</td>
<td>28</td>
<td>6</td>
<td>116</td>
</tr>
<tr>
<td>Response rate</td>
<td>94%</td>
<td>89%</td>
<td>93%</td>
<td>40%</td>
<td>87%</td>
</tr>
</tbody>
</table>

and to clarify aspects of their documentation or the implementation of components of the strategy. A summary of the return rates from different categories of institution is given in Table 1.

The term 'learning and teaching strategy' may have been unfamiliar to some institutions which might have used different language for essentially the same thing. This might explain why some institutions submitted documentation which did not relate closely to learning and teaching strategies (for example, course documentation or minutes of committee meetings about the
use of student feedback). These institutions may in practice have more of a learning and teaching strategy in place than was evident from the documentation which they provided. Other institutions submitted documentation which did not encompass particular components of a learning and teaching strategy even though telephone interviews revealed these components to be in place: for example, mechanisms to promote excellent teachers or initial training programmes to achieve accreditation were omitted. Again this probably reveals a misunderstanding of what a learning and teaching strategy might contain. In some cases no documentation was submitted even though a learning and teaching strategy was in preparation.

The analysis below is based on the documentation provided by institutions and this may therefore underestimate the extent to which components of learning and teaching strategies are actually in place. However, in some cases the extent of use of learning and teaching strategies may have been overstated, since some institutions submitted documentation describing practices which were shown by subsequent telephone interviews not to have been implemented as described.

Although it cannot be stated with certainty from the available information, it seems likely that that errors of omission were more common than errors of unjustified inclusion.

Three main kinds of difference between the institutional strategies were apparent.

1. Relationship with organisational model. Some strategies were linked to, or were subsumed within, existing organisational structures for the formulation and implementation of policies, whereas others were self-contained.

2. Components. Some included a range of components or particular subsets of components whereas others were simpler or, in extreme cases, consisted of only a single component.

3. Change mechanisms which were designed to implement the strategy. Some employed a range of change mechanisms, some relied on a single mechanism, and some included no change mechanisms.

Each of these three features was broken down into a number of categories, into which every institution's documentation was sorted by two independent judges. Where inconsistent categorisations were found, category definitions and sorting were iterated until a reasonable level of consistency of categorisation between the judges was achieved, though no formal measure of consistency was calculated.
Findings

The possession of a strategy

Sixty-three institutions submitted documentation in support of their claim to possess a learning and teaching strategy. Sixty-two institutions reported that such a strategy was under development and submitted various levels of draft documentation or documentation concerning components of strategies. Three institutions stated that they had no strategy and were not developing one. Five returns were not classifiable.

Some institutions have documentation which is comprehensive and evidently the result of extended periods of development, consultation and planning that has taken place across the institution, involving all stakeholders. What is scheduled to happen and who is responsible are clear. Schedules and milestones have been fixed in relation to overall targets. How success will be judged and how the strategy will be reviewed is specified.

Well-developed strategies included features such as the following.

- The restructuring of institutional activities, putting in place a new Pro-Vice Chancellor (Learning and Teaching) and establishing 'Teaching Groups' within each department.
- The establishment of a 'Task Group' to implement the change across the institution, in a similar way to industry setting up a 'transition group' to oversee organisational change from one state to another.
- Heavy investment in a 'Learning Resource Centre', accompanying this with learning materials production facilities, associated staff development, and project funding to support the rapid exploitation of these new facilities.
- The addressing of infrastructure blocks such as the use of traditional accounting for teaching time and traditional uses of teaching space.
- New reward mechanisms put in place to encourage teachers to engage with the strategy and to lead change within their departments.

A few institutions have had learning and teaching strategies long enough to have already been round more than one cycle of review and modification and, as a result, have been able to focus effort and achieve impact in a targeted way.

Purpose

The purpose of learning and teaching strategies was not always apparent from documentation. The most common explicit or implicit purposes were as follows.

- To improve the quality of learning and teaching in general.
To address specific challenges the institution had identified, such as reduced resources or a more diverse student body.

To co-ordinate a range of existing, and currently fragmented, mechanisms associated with supporting and improving teaching in a more coherent and strategic way.

To bring about a cultural or conceptual shift – for example, from a teaching-centred to a learning-centred approach, or to value teaching.

To achieve a specific goal, such as developing students' transferable skills;

To exploit the potential of communication and information technologies (C&IT), for one or more purposes.

In some instances, purposes were unclear or weakly linked to strategic plans. In others, components of the strategy were clearly matched to different purposes and to associated actions and mechanisms.

Organisational model

Institutions had a variety of ways of integrating strategy within existing policies, practices and organisational responsibilities (Table 2). However, in 62 cases it was not possible to tell what the organisational model was, often because the strategy was still under development. Where there was sufficient evidence to judge, learning and teaching strategies were categorised in terms of four main organisational models:

- **Devolved**: in which departments or sub-units were responsible for developing their own strategies, with or without central policy, goals or monitoring.

  Some learning and teaching strategies had been developed as a result of a central initiative, or had been modified through extensive consultation through many drafts over extended periods of time, and had then been left for departments to implement as they saw fit. For example, after an account of an extended development process, one learning and teaching strategy simply stated: "The document is very broad in its approach and makes recommendations to Schools and Central Departments".

- **Integrated**: in which existing institutional plans or quality assurance systems were either considered already to be doing the necessary job, or were being used to support or monitor learning and teaching developments without the need for a separate learning and teaching strategy.

- **Policy driven**: in which the institution considered that the strategy resided in a set of existing policy documents (such as a Policy on Student Feedback or a Staff Development Policy), whether or not these were
Table 2. Frequency of occurrence of different organisational models of learning and teaching strategy

<table>
<thead>
<tr>
<th>Organisational model</th>
<th>No of institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic</td>
<td>26</td>
</tr>
<tr>
<td>Policy driven</td>
<td>15</td>
</tr>
<tr>
<td>Integrated</td>
<td>10</td>
</tr>
<tr>
<td>Devolved</td>
<td>3</td>
</tr>
<tr>
<td>Under development</td>
<td>53</td>
</tr>
<tr>
<td>No learning and teaching strategy in place or planned</td>
<td>4</td>
</tr>
<tr>
<td>Unclear from documentation</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>116</strong></td>
</tr>
</tbody>
</table>

strategic or only procedural; co-ordinated or separate; or contained goals or mechanisms to monitor the achievement of goals.

- **Strategic**: in which a co-ordinated set of goals concerned with learning and teaching, and mechanisms for achieving them and monitoring them, were pulled together across a range of activities which had a common focus on learning and teaching.

**Length of implementation of learning and teaching strategies**

Eighty institutions submitted copies of learning and teaching strategies which stated the date when they were produced (Table 3). Sixty-two institutions also submitted earlier versions of their learning and teaching strategy. The data show the following.

- Overall the development of learning and teaching strategies is a very recent phenomenon, with much current activity. 68 learning and teaching strategies (representing 85% of all current learning and teaching strategies and 59% of questionnaire returns) had been produced in 1999 or 1998 (i.e. in the previous 13 months). The earliest learning and teaching strategy was dated 1990. Only four institutions who responded provided information that revealed the existence of a learning and teaching strategy in 1994.

- Of the ten institutions which had produced their first learning and teaching strategy in 1995 or earlier, seven were still working to the same unchanged strategy in 1999. In contrast, all ten of the learning and teaching strategies produced in 1996 had already been superseded
Table 3. Date of creation of learning and teaching strategies

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Earliest version</td>
<td>4</td>
<td>6</td>
<td>10</td>
<td>10</td>
<td>27</td>
<td>5</td>
<td>62</td>
</tr>
<tr>
<td>Latest version</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>5</td>
<td>36</td>
<td>32</td>
<td>80</td>
</tr>
</tbody>
</table>

by 1999. This may indicate an increased awareness by institutions of the need to update and recast strategies in the light of experience and changed circumstances.

• No institution had abandoned an existing learning and teaching strategy without replacing it.

Consultation

Not all documentation referred to the extent of consultation that had taken place. It was possible to categorise 26 learning and teaching strategies according to the extent of consultation, using a four-point rating scale. In a further 62 cases it was not possible to tell where the learning and teaching strategy came from or how it had been developed (Table 4). The 'no consultation' category was not used unless there was actual evidence that no consultation had taken place (rather than simply no evidence of consultation). Telephone follow-up interviews suggested that in many of the cases where documentation was uninformative there had been little or no consultation.

Components

All 116 replies (which varied enormously in focus, purpose, length and quality) were analysed in order to see what components made up the learning and teaching strategies. The following components were identified.

• Contextual analysis: an analysis of the problems facing the institution and/or of the institutional environment that were producing pressures for change.

• Process of creation: a description of how, and why, the learning and teaching strategy was developed and how 'ownership' was achieved.

• Goals: a statement of what the institution was trying to achieve in terms of learning and teaching, together with rationale. In some instances a rationale was linked to the institutional mission or drafted as a more specific extension to it.

Whereas 36 out of all 88 categorisable learning and teaching strategies contained a full specification of goals, only 10 of them
Table 4. Extent of consultation in the development of learning and teaching strategies

<table>
<thead>
<tr>
<th>Extent of consultation</th>
<th>Category definition</th>
<th>Number of institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full consultation:</td>
<td>A comprehensive consultation with several components or stages, usually lasting many months, and involving many staff</td>
<td>6</td>
</tr>
<tr>
<td>Broad consultation:</td>
<td>Wide consultation but of a single type (for example circulation to Department Boards) or in one stage.</td>
<td>13</td>
</tr>
<tr>
<td>Limited consultation:</td>
<td>Cursory consultation perhaps involving only a central committee</td>
<td>7</td>
</tr>
<tr>
<td>No consultation:</td>
<td>Where it is clear that no consultation took place, for example being written by an individual or small group and simply published</td>
<td>0</td>
</tr>
<tr>
<td>Unclear:</td>
<td>Where documentation did not describe how the learning and teaching strategy was produced</td>
<td>62</td>
</tr>
</tbody>
</table>

contained a full specification of targets that would allow the institution to judge if the goals had been achieved. Fifty-two contained no specification of targets.

- **Culture**: the kind of culture sought by the institution (for example a 'learning organisation' or a 'student-centred' culture) and the mechanisms which might help to achieve it.
- **Targets**: an operationalisation of goals in ways that could be measured or monitored, with schedules or milestones.
- **Curriculum**: changes envisaged by the institution in respect of its pattern of course provision.
- **Learning, teaching and assessment practices**: the teaching, learning and assessment methods that needed to be adopted or emphasised (in a number of cases these were related to intended learning outcomes).
- **Quality assurance**: mechanisms for the review of courses and, in some instances, for the monitoring of implementation of learning and teaching policy.
- **Quality enhancement and infrastructure changes**: various processes and infrastructural changes that were designed to improve quality. Processes included staff development, funding for teaching improvement projects and the sharing of good practice, infrastructural changes related to matters such as the use of learning space, library provision, staffing.
duties and contracts, reward and promotion mechanisms, and the way the institution resourced learning, teaching and the uses of C&IT. These were sometimes expressed in the language of policies.

- **Implementation**: how the process of change would be (or was being) managed in a coherent way, with a specification of the responsibilities of individuals and committees.

Fifty-four of the 88 learning and teaching strategies contained no reference to any change mechanism that could help achieve the goals.

- **Monitoring**: how the institution informed itself about the implementation of the strategy. In some instances existing quality assurance mechanisms were adapted to monitor implementation.

- **Evaluation**: how the institution would determine whether the implementation has been effective in terms of improving learning and teaching.

Full plans for implementation, monitoring, or evaluation were evident in less than one in ten of the strategies.

A four-point scale (‘fully present’, ‘largely present’, ‘partly present’, ‘not included/not present’) was used to rate the extent to which each component was present in the learning and teaching strategy. The last category was also used where no relevant documentation was submitted. There was very considerable variation in what learning and teaching strategies contained. Some documentation concentrated on only a few components but omitted all others— for example, emphasising values (as part of goals) with no further specification of strategy, or being concerned with the curriculum without specifying the teaching of the curriculum.

A summary of the categorisation of components of learning and teaching strategies can be found in Table 5.

### Change mechanisms

Some documentation contained accounts of a range of change mechanisms that either already existed but were being re-oriented in the service of the strategy, or were being established specifically for the purpose at hand. A wide range of such mechanisms were cited and an analysis of the frequency of use of these change mechanisms can be found in Table 6.

Few learning and teaching strategies made use of the full range of mechanisms potentially available. The average number of mechanisms included in each learning and teaching strategy was a mere 1.5 and only nine strategies referred to the use of five or more of these mechanisms.
Institutional differences

Given the history of change over the 1980s and 1990s, the different extents of pressures on different kinds of institutions, and the range of styles of management adopted, it was expected that there would be major differences in the content of learning and teaching strategies in different kinds of institutions.

There were some noticeable differences between types of institution in the overall purposes of learning and teaching strategies. In particular, new universities and colleges seemed much more likely to need strategies to tackle the very challenging educational problems that had been outlined in the context analyses (for example, the rapid changes in their student body or their financial circumstances). In contrast, successful old universities were more likely to describe a more stable environment, few problems with student recruitment and retention, and may have received consistently good TQA ratings. Strategy for such universities may not be so necessary to tackle pressing problems but may instead be oriented to quality enhancement in general, to fend off an erosion of academics’ research time as teaching becomes more demanding, or to achieve a modest re-orientation of institutional mission towards, for example, the development of students’ employability. Such differences in purpose lead to different kinds of strategy even if the actual components or change mechanisms are common to institutions.

At the component level, a number of differences were identified, but they were much less marked than had been anticipated. It has to be borne in mind,
Table 6. Frequency of occurrence of change mechanisms within learning and teaching strategies (LTSs)

<table>
<thead>
<tr>
<th>Change mechanism</th>
<th>Number of LTSs containing this mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial training for full-time teachers</td>
<td>29</td>
</tr>
<tr>
<td>Initial training for part-time teachers and graduate teaching assistants</td>
<td>3</td>
</tr>
<tr>
<td>Continuing professional development for experienced full-time teachers</td>
<td>5</td>
</tr>
<tr>
<td>Appraisal or use of teaching portfolios</td>
<td>14</td>
</tr>
<tr>
<td>Mechanisms to review teaching (e.g. student feedback)</td>
<td>8</td>
</tr>
<tr>
<td>Promotion or rewards for excellent teachers</td>
<td>9</td>
</tr>
<tr>
<td>New types of teaching post (e.g. Readership in Teaching)</td>
<td>7</td>
</tr>
<tr>
<td>Funding for teaching development projects</td>
<td>11</td>
</tr>
<tr>
<td>Educational development support services</td>
<td>26</td>
</tr>
<tr>
<td>Communications and information technology development support services</td>
<td>23</td>
</tr>
<tr>
<td>Investment in a ‘Learning Resource Centre’</td>
<td>8</td>
</tr>
<tr>
<td>Investment in learning materials production facilities</td>
<td>13</td>
</tr>
<tr>
<td>Organisation of change (e.g. Departmental Teaching Committees)</td>
<td>29</td>
</tr>
</tbody>
</table>

however, that the number of strategies against which comparison can be made is relatively low. With that caveat in mind, the following tendencies were identified.

- The process of developing a learning and teaching strategy was started later in old universities than in their new counterparts.
- New universities had engaged in a full process of consultation to a greater extent than had old universities.
- Old universities had focused more attention on the curriculum and on quality assurance than on learning and teaching itself.
- Old universities built their overall strategies on existing procedures in preference to setting up new procedures or mechanisms.
- New universities were more likely to specify learning and teaching approaches (such as open learning) which they expected teachers and departments to adopt.
- New universities paid particular attention to change mechanisms and policies in their attempts to bring about change. New universities were conspicuous for setting up promotion or reward mechanisms for excellent teachers, and for establishing new types of post such as ‘Readerships in Teaching’.
- Where the learning and teaching strategy was concerned primarily with values the institution was nearly always small.
Implementation over time

Few institutions have experience of implementing a learning and teaching strategy over a period of time or of revising it in the light of experience. One of the universities with the longest history of using a learning and teaching strategy had revised its approach drastically in two cycles of review. Its experience over time had mirrored experience in Australia by simplifying the strategy, setting fewer goals, and emphasising the setting of targets and the evaluation of their achievement. In contrast, a university with a long-established learning and teaching strategy had not revised or revisited it in five years, and the documentation appeared not to be 'live'.

Since most learning and teaching strategies have been created very recently, there is little evidence currently available to indicate whether some institutions actually implement their learning and teaching strategy or whether it is largely a paper exercise.

Discussion

The importance of strategy

It is now a truism to say that higher education is faced with changes that will have a marked effect on learning and teaching. Institutions have the ability to give learning and teaching a strategic steer, not only by encouraging departments in various ways to embrace change, but also in their approach to the provision of resources such as library and computing facilities, learning accommodation, and staffing. The rapid changes in the environment of higher education have made strategic thinking an imperative. The existence of a HEFCE funding component for a learning and teaching strategy is likely to stimulate action on the part of those English institutions which have yet to get fully to grips with the issues, but it should not be the primary driver for change – after all, the primary responsibility for vision, policy-making and implementation resides with institutional leaders.

Building on what exists already

A few institutions have been thinking in strategic terms for a decade or so: Habeshaw (1990), for example, produced a document designed to stimulate thinking in the former Bristol Polytechnic which pointed out a number of challenges that the institution would have to face. What the HEFCE-sponsored survey showed was that components of teaching and learning strategies were quite widely in evidence, even if these could not, at this stage, be seen as constituting full strategies. The issues for the sector seem to be
twofold: to widen thinking about what a learning and teaching strategy might contain, and to integrate appropriate components that are already in existence into an overall strategy.

A national "push towards the formulation of learning and teaching strategies took place in Australia during the early 1990s, when the government took the view that quality assurance needed to be strengthened and funded three rounds of a quality assurance initiative between 1993 and 1995. Teaching and learning were particularly prominent in the first round, which appears to have led Australian universities to produce strategies. Many of these are now accessible through the universities' websites. Amongst the universities which have given learning and teaching considerable thought are the University of Western Australia, the University of Queensland, Monash University and Griffith University. The first three of these universities have detailed institutional-level documents which incorporate a substantial number of the components listed earlier in this article. Griffith University has taken the process a stage further, in that it has an institutional-level document which is further developed at faculty level. Looking at the faculty strategies, it is clear that they have chosen to elaborate on the institutional strategy in different ways, which means that the challenge for the university will be to maintain overall coherence under a dispensation of subsidiarity.

**Developing and implementing strategy**

The development and implementation of a learning and teaching strategy require leadership and management. Following Kotter (1990), a leader is primarily concerned with setting a direction, motivating people and gaining their willingness to support action, whereas a manager is more concerned with the practicalities of bringing change about. As Middlehurst (1993) points out, the leadership role varies with level in the institution (but her data were collected from pre-1992 universities and hence some of the role distinctions that she makes fit post-1992 universities and colleges less well). Leadership and management overlap: a person might be acting in the role of leader at one moment and in that of manager at another.

The organisational development literature, which needs to be given a particular interpretation appropriate to the character of higher education, offers a number of useful insights for those faced with leading and/or managing change. Argyris (1990), Burnes (1992) and Kotter (1996) have had particular influence on what follows.

There is a need to make clear to staff why the issue of a learning and teaching strategy has to be addressed now. The immediate driver for English institutions is coming from HEFCE, but deeper thought about the issue shows that the pressures under which the higher education system is working (and
which are set to increase further with time) mean that change – perhaps quite radical – will be needed if students’ learning experiences are to be improved, and if the precious asset of staff time is to be used to best effect whilst at the same time offering staff satisfaction in their work.

The danger is that an individual or small group will prepare a strategy to satisfy the external requirement, without ensuring that it has a sufficient degree of acceptance across the institution for a successful implementation. A collateral danger is that HEFCE itself might be tempted to expect too much in the first tranche of strategies, and thereby pre-empt the development of an institutional climate likely to maximise success.

In the institutions surveyed, most of the strategic thinking had a relatively short time-horizon, sometimes as short as the next academic year. Exercises in futurology such as that run by Yorke et al. (1996) can be helpful in developing a longer view, allowing short-term measures to be located with reference to a more strategic perspective. In the US it is not unusual for institutions to engage in ‘environmental scanning’ as a precursor to the formulation of strategy. Miami-Dade Community College, for example, has recently conducted such an exercise in respect of both its external and internal environments, and has taken the further step of identifying what the implications for the College will be. An activity of this sort is potentially important for strategy.

A learning and teaching strategy for the 21st century will almost certainly reflect a need for significant modification of the way that academics go about the business of teaching, and it is unrealistic to expect such change to take place overnight. The need will be for leaders to work with academics to solve the problems thrown up by envisaged futures: academics cannot be expected to adopt strategies ‘off the shelf’ – after all, they are trained not to accept propositions uncritically. If practical realities are such that a strategy document has to be produced to a short time-scale, then it is probably wise to make clear that this is an interim document which can be expected to be modified in the light of consultation across the institution. Liverpool John Moores University, for example, has been developing its strategic thinking through consultation over a period of years, and it is doubtful whether it would claim to have produced the definitive strategic statement even after all this.

A corollary of the preceding paragraph is the need for the leadership to communicate widely and continually, and in straightforward language. Neither ‘bureaucratese’ nor Latin phrases are likely to be appreciated by the majority of staff – and it should not be overlooked that a learning and teaching strategy will have implications beyond those for academics. Communication is not a unidirectional matter. Change will bring difficult issues to the surface:
the leader has to be prepared to listen to the concerns of staff, and to show that they have been taken into account as the strategy is developed.

It is unrealistic to expect that all of the components of an institutional strategy can be implemented within a relatively short time-span. Some items, such as a recognition and reward system, can be implemented relatively quickly, enabling the strategy as a whole to notch up some visible early successes, even though the impact of such a change on academic culture might be slow. Others, such as the implementation of a higher proportion of 'open learning' in curricula have knock-on effects which need to be anticipated – for example, the increased demands that would follow on library and computer resources, the likelihood that the institutional learning accommodation portfolio would need to be developed, and the probable need to provide an enhanced advisory service to students. A few institutions made clear in their existing strategies that they expected X% of modules to be delivered by open learning in Y years, but how realistic these intentions were could not be ascertained from the documentation they provided.

Developing a learning and teaching strategy for a whole institution is a complex matter. The kinds of component indicated earlier in this article are important, but need to be located within a coherent framework. The disposition of the time of academics and support staff may need to be reviewed: if so, then the traditional approaches to the calculation of workloads may need to be revised. In the development of a learning and teaching strategy (as of strategy in general), systems thinking is crucial.

Disciplinary differences have to be taken into account. Whilst an overall strategy might provide a general framework, disciplines will need sufficient freedom to implement the framework in ways which reflect their particular cultures without falling into the trap of homeostasis in a rapidly changing environment. At the institutional level, there is a risk – as was discerned in a few of the submitted documents – of a reliance on a 'one club' approach, such as basing the strategy solely on an increased use of information technology.

As Trowler (1998) found in his study of 'NewU', academics respond differentially to change. Faced with, in this case, a major change in curricular structure, staff's responses fell into four categories:

- 'sinking' fatalistically;
- coping with the change but as a consequence performing less well in other aspects of their work;
- seeing opportunities arising from within the change; and
- finding ways in which they could reconstruct policy relating to the change.

Where change is concerned, the role of manager becomes crucial. If the manager occupies the role on a temporary basis, the incentive might not be
strong enough for him or her to put in the effort to maximise the impact of the strategy.

Learning from experience

It is clear from contacts with institutions that a number are already learning from the process of developing and implementing strategic thinking about learning and teaching. It is not always effective for institutions to develop their own thinking in isolation from others. Some institutions’ documentation regarding strategy and consultation processes is mounted on websites and is accessible. This affords considerable scope for learning across the sector, particularly between institutions with similar missions and management styles. As was noted earlier, Australia offers some of the most developed examples of strategic thinking about learning and teaching.

The Australian Government has been particularly proactive in commissioning studies designed to support the development of the national higher education system. Of particular relevance to learning and teaching strategy is the review of the literature and practices relating to the recognition and reward of teaching (Ramsden et al. 1995).

Learning and teaching strategies need to be reviewed periodically and revised in the light of experience and of emerging developments. Some components of the strategy may prove to be less effective than had been envisaged, necessitating amendment or abandonment. Success with others may spawn further developments. Some of the institutions which supplied evidence for the survey had strategies which had been written some time ago, but had remained unchanged despite changes in institutional organisation and priorities. Learning and teaching strategies require constant attention.

It is also likely that the limitations of strategic planning and rational approaches to change in teaching will become more apparent as institutions attempt to implement their strategies. Strategic goals may become irrelevant within the time scale of strategic plans and both new opportunities and new obstructions may overtake the best laid plans. The way teachers make sense of their teaching challenges, and the way they respond to cultural pressures in dealing with these challenges, may also relate weakly to rationally derived analyses and plans.

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Note


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