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Chapter 1 Why assessment is changing

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Introduction

There has been a proliferation of books about assessment in higher education containing case study accounts of innovations or simply lists of ideas offered as if they were best practice. This proliferation reflects rapidly changing practice and this change is being brought about not only by the enthusiasm of expert teachers, but by a whole raft of changes in the context within which assessment operates. This chapter explores some of these contextual changes and the problems they bring, in order to provide a background in which innovations and their impacts are described. While some of the context described here may be specific to the UK, the phenomena are similar in higher education in many other countries.

Declining resources

Government funding per student has halved in real terms over the past 15 years in England. An increasing proportion of the remaining available resource has been allocated to administration, meeting quality assurance

requirements, to earmarked national initiatives (such as the Higher Education Funding Council for England's Human Resource Strategy and Widening Participation Strategy) and to ever more extensive uses of information technology. In addition, library costs have increased very much faster than inflation. As a consequence academic salaries make up a smaller proportion of institutional budgets than they used to, as in the USA. There is less academic time available per student and intense pressure on academics to increase research productivity. At the same time there is increased bureaucracy associated with meeting external requirements for quality assurance and requirements for accountability concerning use of funds. Even if student numbers had remained stable it would have been difficult to maintain the previous level of academic time invested in assessment.

And of course at the same time the total number of students has increased. An inevitable consequence has been that student:staff ratios have also increased. When I started writing about assessment in the early 1980's student:staff ratios at my institution were about 8:1 in the Sciences and 12:1 in Social Sciences. They are now commonly in the range 20:1 to 30:1 and where student recruitment cannot generate such high ratios the courses have been axed. Class sizes have increased considerably, accelerating first in the Polytechnics in the 1980's (Gibbs et al, 1996) and more recently in the research-led universities. When I joined Oxford Polytechnic in 1980 there were just over 400 academics to teach about 5,000 full time students and when I left seventeen years later there were roughly the same number of academics but there were by then about 12,000 full time students. In the

period 1984 to 1994 the size of the largest class at Oxford Polytechnic increased from 196 to 462 students and the number of courses with enrolments of over 70 had increased by 208%. Class sizes have increased markedly in the decade since and the size of the smallest classes students experience has also increased. In 1994 225 courses had enrolments of less than 20 but since then 20 has been considered the lower limit for a course to be considered viable (Gibbs et al, ibid).

Students also now spend an increasing proportion of their total programme in large classes, rather than quickly moving on to small-enrolment specialist modules after their first year. The size of the largest class in most degree programmes has increased much faster than the decline in resources could explain. There has been 'rationalisation' of course provision, bringing courses together to increase student enrolments (for example all first year 'introduction to statistics' courses bundled together). The student fee income from large enrolment first year courses, in particular, has been used to cross-subsidise other courses with fewer enrolments (and with more expensive patterns of teaching and assessment), rather than allocating resources for teaching and assessment where they are earned. As a consequence the actual resource allocated per student in the largest classes may be very much less, in real terms, than what it was twenty years ago.

As class sizes have increased there have been some economies of scale in teaching (such as through larger lecture classes and 'tutorials' that may nowadays contain 25 students) but there have been few economies of scale

in assessment. Assessment costs usually increase in direct proportion to the number of students. So as class sizes increase, assessment costs overtake teaching costs. In practical terms, lecturers can end up spending more time each week marking than they do in classrooms. If mechanisms to allocate academic staff time to assessment were proportional to the number of students involved this might not cause too many problems, but they are not. In many institutions the accountancy unit of 'duties' is the 'class contact hour' and this ignores class size. Assessment loads that are proportional to class sizes are often not taken into account. A lecturer may find that she has 50 hours allocated to give one lecture a week to 100 students for ten weeks, and to lead four problem classes each of 25 students a week, but no time at all allocated to mark 100 problem sheets a week or 100 exam scripts at the end of the course. Lecturers then find themselves not only with large classes but with no more time to assess the many more students than they had when classes were much smaller. The phenomenon of assessment taking up more time than teaching does not last long as it is quickly followed by radical surgery to the volume of assessment and, in particular, the volume of feedback, in response to the lack of academic time available to do the job properly (given the duty allocation systems used). Even where the proportion of academic time allocated to assessment has increased, the time available per student to assess an individual student's work will often have declined to a small proportion of what it was 20 years ago. Not even library facilities or class contact has suffered, as resources have declined, to the extent that assessment has.

When I was an undergraduate in the late 1960's I wrote essays and submitted practical reports on my Psychology courses at very regular intervals, and about once a week in the second half of each semester (spread across the four courses I took at a time). What I remember about my studies is largely the essays I wrote (and the experiments I designed and carried out, and other assignments) and the comments of my Lecturers on my work, which I often discussed by dropping in on their offices. I have only the vaguest recollections of the content of lectures.

To help recognise the scale of such changes it is illuminating to contrast this picture with what has taken place at the Open University and at the University of Oxford where assessment has not changed in this way. As a matter of Open University policy, '60 credit' courses (involving a nominal 600 hours of student learning effort) have eight assignments and 30 credit courses have four assignments. Tutors are allocated groups of up to 24 students whose assignments they mark and comment on. Even if overall student numbers are enormous tutor-group size and tutor time per student to give feedback on assignments, is not affected and has remained largely unchanged for 30 years. At the Open University today student enrolment on a single course can exceed 10,000. However these extraordinary enrolments have had almost no impact on the volume of assessment or the volume of feedback that individual students experience. The Open University simply hires more tutors in direct proportion to the number of students. Each assignment receives extensive written tutor feedback often consisting of several pages of overview comments in addition to detailed comments written on the scripts themselves. The quality

of these tutor comments is carefully monitored to ensure they are of an appropriate nature and standard – the distance learning equivalent of regularly observing teachers' classes to monitor their quality. There are creeping changes in the nature of assignments, including computer-based tests, and the use of automated feedback, but by and large students' experience of assessment will have changed little since the Open University was founded. Students' positive response to this protection of assignment writing and feedback is very evident in student feedback, compared with students' experience of assessment in conventional institutions, as we shall see in Chapter 2. This has been achieved by deliberately investing in assessment in a way that most institutions have not.

At the University of Oxford the main form of 'assignments' is the preparation students undertake for weekly tutorials in which they may read out or discuss the essay they have been assigned at the previous week's tutorial. Formative assessment consists of their tutor's oral feedback, sometimes accompanied by written feedback, on this essay. Usually no marks are involved. The frequency of essay writing and the volume of feedback is considerably larger than most other institutions manage (other than Cambridge, whose 'supervisions' are similar). Despite the considerable expense involved, the number of occasions on which 'essay writing plus individualised feedback' happens at Oxford has in some courses increased in recent years and some students may write as many as three essays a fortnight. As at the Open University, 'assignments plus feedback' is seen as central to students' overall

experience of their learning environment, and so worth protecting. The contrast with most institutions could hardly be greater.

These examples show up in stark relief what has happened to feedback in most higher education institutions. A generation after my own undergraduate experience my daughters have both studied in research-intensive universities in England in recent years, one studying Law and Sociology and the other Chemistry. They experienced courses with no assignment or no written feedback at all, courses with the one assignment returned only after the examination, laboratory reports returned a term later with marks but no comments on, and so on. Where written feedback was actually provided and in reasonable time, it was often so brief as to be of very little value. I calculated that an average Open University graduate would have received at least 50 times more written feedback than a graduate from my daughter's courses. If a university announced that it was going to cut back its teaching to 2% of what another institution provided there might be something of an outcry. However this is exactly what many institutions have done with regards to assessment and feedback, without announcing this, or even, I suspect, planning it. And they have done this not for educational reasons but for the kind of resource reasons identified above. Feedback has been easy to cut back on by individual teachers (where other changes in teaching may require approval and debate) and has saved a great deal of time. Importantly it has been difficult for external quality assurance inspections even to notice this decline in feedback.

Assignments and study time

As class contact time has been cut back, students ought to compensate by spending more time studying independently out of class in order to maintain a reasonably hard working learning week. This is what happens in a 'steady state' system where an increase in teaching time results in a reduction in study time, and vice versa (Vos, 1991). An undergraduate working year is defined in the UK as 1,200 hours, and a '10 credit' course as 100 hours. This means 100 hours of student effort of whatever kind, including class contact and independent study. If a 100 hour course experiences a reduction in class contact time from 50 hours to 40 hours (the kind of change I remember in science courses at Oxford Polytechnic in the mid 1980's) then independent study ought to increase from 50 hours to 60 hours to compensate and to make the total back up to 100 hours. This represents a shift in the ratio of class contact to study time from 1:1 to 1:1.5. Losing 20% of the class contact has increased the amount of studying required to be generated by each class contact hour by 50%. If, as is more common today, class contact is reduced from 30 hours to 20 hours then studying has to increase from 70 hours to 80 hours to compensate. This represents a shift in the ratio from 1:2.3 to 1: 4. This a 74% increase in the number of hours of study each hour in class has to support. Today it is common for each hour in class to have to support three to four times as many hours out of class as in the early 1980's. I have not seen a sufficient change in how class contact is used to convince me that the nature of teaching is capable of achieving such a dramatic change in student learning behaviour. So how is this additional study time to be generated? In many

contexts social pressures generate study effort. If you are in a small seminar group or problem class and you have not done the reading or preparation then it can be embarrassingly obvious. One reason that students at the University of Oxford work so hard despite very low class contact time is that in one-to-one tutorials there is no place to hide. Each tutorial hour is known to generate 11-14 hours of independent study (Trigwell and Ashwin, 2003), a ratio of between 1:10 and 1:14. As seminars, problem classes (and even tutorials) increase in size, and social coherence declines, the social pressure to prepare properly decreases. Students avoid eye contact and use other cunning strategies to get away with superficial preparation, and they simply study fewer hours. What leverage to capture study effort is left derives almost entirely from the demands of the formal assessment system.

Students have always been strategic, as studies at the end of the 1960's in both the USA and UK illustrated so vividly (Snyder, 1971; Miller and Parlett, 1974). Students largely study what is assessed, or more accurately, what they perceive the assessment system to require. The reason the Open University has maintained the volume of assignments is because it is hard to see what else would maintain the volume and quality of distance students' studying if they were taken away. But conventional higher education institutions have cut back on assessment as well as on class contact, due to the costs involved. For a student today, being strategic would involve focussing effort more narrowly and less frequently and simply doing less.

At the same time students' working lives have changed in a way that puts pressure on their time. First, students undertake part time paid work to a much greater extent than in the past. Students' financial difficulties, exacerbated by fees and loans, have accelerated this trend. Studies have shown how this affects grades (presumably as a consequence of spending less time on assignments) (Paton-Saltzberg and Lindsay, 1993). In the USA a considerable proportion of students 'work their way through College' and take fewer courses at a time than a full time student would, or take time out in some terms or years to earn before returning to study. In the UK, by contrast, students seem to expect to be able to register as full time students even when they are working twenty hours a week to earn income, and expect to complete their degree programmes in three years regardless. An increasing proportion of students are actually studying part time but enrolled full time, and the assessment arrangements allow them to do this.

If students were to progress through their degrees at a rate commensurate with their current study hours, as institutions are funded in relation to the volume of student progression quite a few institutions would find themselves in severe financial difficulties. Departments are increasingly aware of such financial consequences and so courses find themselves under intense pressure to collude to reduce demands on students in order to maintain fee income. Despite reduced class contact, assessment demands have been reduced as well and students' study hours per week have declined. The main threat to quality and standards I perceive is the shrinking total volume of studying which results directly from reduced assessment demands.

‘Modularisation’ and assessment

In 1980 in the UK a proportion of Oxford Polytechnic was ‘modular’, in the sense that course units were of identifiable (and mainly equal) size and that students could construct their own programmes by combining ‘modules’, taking credits until an undergraduate degree was accumulated. In some subject areas the rules governing module choice (such as prerequisite rules and compulsory modules) made these modular programmes not different in many respects from conventional three year programmes made up of course units. Nevertheless over the next twenty years almost all of UK higher education ‘modularised’ its programmes. Most of North American higher education was of course already ‘modular’ (though it did not call itself this).

One of the purposes of this enormous curriculum redesign exercise was to allow students to move flexibly between institutions as a consequence of a common ‘tariff’ of course credits: the ‘Credit Accumulation and Transfer System’ (CATS). Student demand for mobility between institutions did not materialise to anything like the same extent as in North America, though the Bologna agreement may well lead to increased volumes of transfer of students between institutions within Europe.

Modularisation has had some profound (and largely unintended) side effects on assessment systems. Modules tended to be small – as little as 10 credits or 100 hours of student effort. A traditional linear degree programme might

have involved four courses each lasting three terms and these would have translated into 30-credit or 300-hour courses. At one time at Oxford Polytechnic 10-credit modules lasted one term and students normally took four at a time for three terms. At one time some institutions offered 10-credit modules which lasted one semester and students took six at a time.

A consequence of small study units is that summative assessment has to take place more frequently. The total volume of summative assessment may have doubled as a direct consequence of modularisation, without any increase in staffing, and this has put pressure on finding more cost-effective assessment methods or simply cheaper methods regardless of their effectiveness. Tests of memory under examination conditions and objective tests and multiple choice question tests, on or off line, are much more common as a result.

Another consequence of the shorter length of study units has been that there is little time for students to gain familiarity or practice with material or skills before they are assessed. Turning feedback round in time to be useful to students before the module is finished can be difficult. ‘Early’ formative assessment may mean half way through the module.

As each examination or assignment tends to assess a smaller quantity of content area it is less common to see integrative assessment that pulls together a wide range of material. Usually regulations prevent any assessment that is not associated with an individual module and so integrative assessment at the end of a degree programme cannot take place unless there

is an integrative module. A consequence has been a narrowing of the focus of assessment to more discrete units of content, and less coherent progression.

Because all assessment has to take place within modules, and modules are short (as short as ten weeks) examinations may take place only a week after teaching is finished. The opportunity for students to use extended revision periods to pull material together into a meaningful whole (Entwistle, and Entwistle, 2003) is lost.

It is harder to plan sequences of linked assignments where each feeds in to the next, when timescales are short and resources only allow one or two assignments in a module. It may be difficult to make any kind of arrangements that would make feedback feed forwards effectively.

Where modules are larger (as at the Open University, where the standard size is 60 credits or 600 hours spread over nine months, with students taking one course at a time) it is more common for there to be more assignments per course and for each assignment to be larger in size and scope. Where small short modules, at conventional institutions, have tried to retain a reasonable number of assignments they have each tended to be rather small, narrow in scope and undemanding in nature, simply because of the limitations on both students' and teachers' time within such small and short courses.

As a consequence of these problems there has been a recent trend to move back to a smaller number of larger and longer modules, including two-

semester modules. Regulations often prevent this and where this happens draconian and educationally unsound solutions have been imposed, such as forbidding summative assessment in the first semester.

Plagiarism

Judging from the press coverage, the number of publications and advertisements for national conferences on the topic, and the scale of investment in electronic tools designed to identify plagiarism in students' work, plagiarism is a rapidly growing phenomenon in the UK, starting from a low base quite recently as evidenced by the establishment of the JISC Plagiarism Advisory Service. It has been exacerbated by:

- the use of short easy-to-mark assignments, designed to cope with resource problems, that are easier to plagiarise;
- the difficulty of producing unique assignments for each student, due to large student numbers;
- increased use of the internet to locate learning resources, and electronic submission of assignments, which makes it easy to 'cut and paste' assignments together;
- increased use of peer learning and group based learning that encourages collaboration while learning (for sound pedagogic reasons), and even during assessment in some circumstances;

- ‘delinquency’ and a lack of regard for socially binding but informal rules about cheating, resulting from the alienation which impersonal large classes can foster;
- an increasing proportion of students coming from educational backgrounds where reproduction of content and of the teachers’ own words is perceived to be the purpose of education;
- the general increase of ‘coursework’ of all kinds, not under invigilated examination conditions, that is marked, and where the marks contribute to overall student grades. In the past these may have been ‘formative only’ assignments but today’s students are rarely prepared to undertake tasks unless they are marked.

One of the main consequences of the increase in worries about plagiarism has been a reversion to invigilated examinations and a reduction in ‘take home’ coursework. This inevitably reduces students’ study effort during courses and probably lowers the cognitive level of student engagement with study material.

Computer aided assessment

Using computer-based multiple choice question testing is hardly a new phenomenon, but compared with the USA it has been adopted rather slowly and to a limited range of subjects and contexts in the UK. The implementation of institution-wide ‘virtual learning environments’ has made it much easier to use simple forms of computer based assessment and there has been ever

more funding, projects, dissemination and staff development to support those who would like to use such methods. Unlike the USA much use of computer aided assessment is largely formative in nature: to give students practice and feedback and to highlight where more studying might be appropriate before the 'real' assessment at a later point. Evidence from the comparison of assessment methods including computer based assessment is however fairly consistent in its findings. Students tend to adopt a surface approach to their studies to a greater extent (attempting to reproduce) rather than a deep approach (trying to make sense) if computer based assessment is used or is even included as one component of assessment (Scouler and Prosser, 1994). There has been plenty of development of software that enables the construction of more sophisticated and demanding question types and plenty of literature and guidance about how to construct more demanding computer-based assessment. However lecturers still tend to ask questions that make low level demands, mainly because it is easier, and students still assume that only low levels of demand will be made, even when this turns out not to be the case. There is very little evidence, notwithstanding the benefits for feedback as discussed in Nicol and Miligan's chapter (5), that the increase in the use of computer based assessment has had beneficial impacts on the quality of student learning, though there is some evidence that it has increased its quantity.

Declining student retention

The type of students now entering higher education are more diverse and with less predictable educational backgrounds and pre-requisite knowledge than in the past. They require more support in the form of feedback on progress and guidance about how to improve, but are instead experiencing reduced support from assessment and more hurdles (in the form of tests) that trip them out of courses. Retention is declining. Institutions are losing substantial funds because their students do not complete their courses. This can be caused by inappropriate (but cheap) assessment. In order to identify 'at risk' students early enough to intervene, some courses are introducing early formative assignments that are graded in difficulty (so as to develop students self efficacy, or belief that they are able to study effectively in higher education) and which provide positive feedback but no marks (so as to encourage and guide students). The use of conventional tests, with marks, early on may have a detrimental impact on students, even if the teacher is able to identify which students need help (Yorke, 2001).

The specification and assessment of new kinds of learning outcomes

In the UK, as in many countries, there has been a shift over the last twenty years in terms of what higher education is perceived to be for, and especially a shift towards a utilitarian view of higher education as preparation for employment . In the UK the Quality Assessment Agency specification of subject benchmarks for all disciplines, and the move to specifying curricula in terms of learning outcomes, has required new kinds of assessment designed to assess 'key skills', 'transferable skills', 'generic skills' or 'graduate attributes'

rather than only assessing the acquisition of knowledge. These types of assessment place even more emphasis on feedback (as skills are learnt through cycles of practice and feedback) and are inherently more expensive and time consuming than conventional written exams. Inexperience at specifying these skills has often resulted in specifying far too many for each individual course, resulting in an increase in the number of occasions on which students are assessed, and more complex and multifaceted assignments and tests. The resource implications have often led to more superficial, rather than more sophisticated assessment.

While the reliability and consistency of standards involved in assessing conventional subject knowledge is not very impressive, standards are even less well articulated and implemented when assessing ‘generic skills’. Lecturers tend to have at least some shared understanding of what a ‘first class’ essay looks like in their discipline, but there is as yet no such consensus about what ‘first class’ group skills look like.

At best, this movement has resulted in a reconceptualisation of curricula in which generic skills are conceived of as an inherent part of scholarly study of a specific discipline, rather than as unrelated vocational extras (Barrie, 2004). This can then lead to profound changes in the nature of the kinds of ‘performances of understanding’ students are expected to display, and lead to parallel changes in the kinds of criteria used to assess these performances. This can even lead to a reduction in volume and increase in sophistication of assessment, for example concentrating on a small number of large complex

assignments, such as a final year project, in which there is sufficient scope for a range of high level skills to be exemplified and observed in a single complex performance.

Problems of innovation

All of the above pressures have led to an unprecedented amount of innovation in assessment as teachers attempt to cope with contending pressures – but this has proved highly problematic for a range of reasons. Resources are still declining and academic staff time, either to redesign assessment or to conduct more, or more time consuming assessment, is at a premium, especially in the context of acute pressures to increase research output.

Worries about declining standards have resulted in institutions being cautious about approving changes to assessment, and extremely cautious about innovating in assessment in ways that external examiners might be unfamiliar with, might not approve of or that students might object to. The dominant culture is conservative and defensive rather than bold. It is often more difficult and more time consuming to gain approval for changes in assessment than for changes to any other aspect of courses.

Students are also often conservative. Pressed for time, they are instinctively wary of approaches they are not familiar with or that might be more demanding. Paying fees, in debt, and aware of the financial consequences of

failure, or even of not obtaining a good class of degree, they are unhappy about assessment methods where the outcomes might be less predictable. They are also increasingly litigious and may challenge assessment grades where criteria and standards are not explicit or where they feel they have not adequately been prepared to tackle the assignment or test. The starting position in many contexts is one of fairly uniform patterns and methods of assessment across entire degree programmes. Students may expect that each successive course they take will be assessed in much the same way. When they discover major variations they may be quite unhappy. Students' unfamiliarity with new assessment methods may also make it harder for the teacher to make the innovation work well.

There are also some contexts, especially in very recently developed subject areas without disciplinary histories, where there is no consensus or tradition about assessment, and no agreed approaches or standards. Criteria may be different on every course. Ways of allocating marks to individuals who have tackled a group project may be different for every course that uses a group project. Rules about plagiarism, collaboration, deadlines, penalties for late submission, or word limits and penalties for exceeding them, opportunities to re-sit tests or re-submit assignments, may differ widely between courses within a single degree programme. In such contexts students can be so confused it can be difficult to make any innovation work well.

Students are increasingly strategic in the way they allocate their time and effort (Macfarlane, 1992) and may only study what is assessed (Innes, 1996).

While in the past it may have been possible to be experimental and to take risks with assessment where grades did not contribute to course marks and degree results, now students may be unwilling to tackle un-assessed, or only formatively assessed, assignments in a serious way, or to tackle them at all. Teachers' response to such instrumentalism has been to summatively assess all assignments, no matter how small. Once an assignment's marks contribute to course grades the full panoply of external examination regulations comes into force, such as blind double marking, student anonymity and not informing students of their grades until after the examination board has met, usually after a course is finished. As a consequence assessment costs increase. To cope with these increased costs, the assignments and tests then have be made quick and easy to mark, and this has changed the nature of the assignments and tests and made them less open-ended and less likely to foster a deep and thoughtful approach to studying. Instead of being imaginative and innovative, assessment reverts to simple and crude basics. It can be a vicious and downwards spiral.

Conclusion

'The case studies in this volume should be read in the light of the problematic contexts in which they are set, as discussed above. These are not innovations for innovations' sake, but changes designed to improve student learning after traditional approaches to assessment have become problematic in some way given the changed context. In some cases the nature

of these problems has been clearly identified and the specific educational goals of the innovation have been clearly specified in relation to these problems. In some cases the extent to which these problems have been successfully addressed is clear from the evaluation evidence provided. In other cases the context and associated problems are implicit and the evidence is less narrowly focussed.

Part of the difficulty of the context of assessment described in this chapter is how hard it can be to make changes to assessments that are based on different rationales and purposes than those of the methods they replace. Some of the case studies illuminate how change was brought about and there is a focus on what innovation in assessment consists of, as well as a focus on the assessment methods themselves.'

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