4

Using Assessment Strategically 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

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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. Once you get to a ratio of class time to independent study time of about 1 : 3 the class contact becomes less dominant. Students become more strategic in allocating their out-of-class time to what counts: to what is assessed. 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 assessment 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 themselves to what he termed the 'hidden curriculum'. In particular, he showed the extent to which students constructed their own understanding of the curriculum 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 students 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 during studies of students' responses to class size reinforced this picture. In transcripts 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 Metropolitan 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 time

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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 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 strategic 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 Australia (Boud 1986)

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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'.

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Table 4.1 The 'Seven Principles for Good Practice in Undergraduate Education' (Chickering and Gamson 1987)

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.

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

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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 students' 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 it simply happening or not happening. 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 Undergraduate Education' and the keyword here is 'prompt'. In the face of increasing 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 in circumstances like this be less important than its frequency and timing. But even timely feedback may not have much impact if students do not pay serious attention to it.

The next principle involved here is that students pay attention to feedback 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,

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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 who 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 understanding 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

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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, markers 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 use 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 once 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 it 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,

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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 – so 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.

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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

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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 solve equations, manuals, books, notes – in fact, every kind of support they find helpful. They do not try and remember everything. So students were

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allowed the same kind of aids, including their lecture notes, books, laptop computers with any kind of software they liked, and so on. The result of such an exam is that students focus their revision and their preceding study, 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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References

Alverno College Faculty (1994) *Student Assessment-as-Learning at Alverno College*, 3rd edn. Milwaukee, WI: Alverno College Institute.

Boud, D. (1986) *Implementing Student Self-Assessment.* Green Guide No. 5. Kensington: Higher Education Research and Development Society of Australasia.

Chickering, A.W. and Gamson, Z.F. (1987) *Seven Principles for Good Practice in Undergraduate Education. Wingspread Journal*, 9(2), special insert.

Gibbs, G. and Lucas, L. (1997) 'Coursework assessment, class size and student performance 1984–94'. *Journal of Further and Higher Education*, 21(2), 183.

Innis, K. (1996) *Diary Survey: How Undergraduate Full-time Students Spend their Time.* Leeds: Leeds Metropolitan University.

MacFarlane, B. (1992) 'The "Thatcherite" generation of university degree results'. *Journal of Further and Higher Education*, 16, 60–70.

Miller, C.M.L. and Parlett, M. (1974) *Up to the Mark: A Study of the Examination Game.* Guildford: Society for Research into Higher Education.

Snyder, B.R. (1971) *The Hidden Curriculum.* Cambridge, MA: MIT Press.

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