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REPORT: MONITORING STUDENTS LEARNING

Introduction

This report describes techniques employed by me in monitoring student learning otherwise commonly referred to as Classroom Assessment Techniques (CATs). The term "Classroom Assessment Techniques" is used to describe a wide collection of techniques. For example, Angelo and Cross have identified altogether 50 separate techniques of assessment and they claim that their book is not supposed to be a comprehensive list but rather a collection of the most common types.

Research on learning tells us that what we need to be striving for is "deep learning" as opposed to "surface

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The key difference between these two types of learning can be characterized by the students’ approach to their learning. Surface knowledge is the use of low-level cognitive skills with minimum effort to complete course requirements. On the other hand deep learning involves learning for understanding, engaging in higher level cognitive skills and a desire to think conceptually about the topic. We all strive for this with our students, but does our teaching methodology allow this to happen? The bottom line is that if we want students to be engaged and mindful about their learning, and their final grades to reflect authentic learning, we have to find ways to monitor student learning in our classes while they’re learning.  

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learning. By doing this, we engage and empower them to become deep learners.\textsuperscript{10}

Classroom assessment is therefore a vital component for fostering deep learning and allowing instructors to understand what students are learning and where are the difficulties students are encountering in learning. Good feedback practice is not only about providing good information to the students about learning but it is also about providing good information to teachers.\textsuperscript{11}

As Yorke (2003) notes:

The act of assessing has an effect on the assessor as well as the student. Assessors learn about the extent to which they [students] have developed expertise and can tailor their teaching accordingly.\textsuperscript{12}  

\textsuperscript{10} Qualters, D. Are Students Learning What We’re Teaching? Centre for Effective University Teaching NorthEastern University http://www.ceut.neu.edu/resources/tchgmttrs/aslwwt.html.htm
\textsuperscript{11} Qualters, D. Are Students Learning What We’re Teaching? Centre for Effective University Teaching NorthEastern University http://www.ceut.neu.edu/resources/tchgmttrs/aslwwt.html.htm
In order to produce feedback that is relevant and informative, teachers themselves need good data about how students are progressing. They also need to be involved in reviewing and reflecting on this data and in taking action to help close the learning gap. The following sections are based on research conducted by me to test the validity of this viewpoint.

**Background**

I teach several undergraduate seminars and therefore was interested in monitoring my students' progress. I was aware that there are a variety of methods available for teachers to generate public information about students for example by setting assessment tasks and in-class through questioning of students and through observation. I was also aware that such information helps teachers uncover student difficulties with subject matter (e.g. conceptual
misunderstandings) and difficulties with study methods while carrying out assessment tasks.

Finally, this Report is based largely on the results of feedback from both students and staff of my efforts at monitoring my students progress in the context of the following seminars: law of evidence, criminal law and criminal justice and the penal system, during both the 2005/2006 and the 2006/2007 academic years.

Pre THE period

Prior to registering on the THE programme, I had conducted seminars on the law of evidence module in the first half of the 2005/2006 academic semester. The approach utilised by me was essentially formative. In other words, I asked them questions based on the set assignments and I expected them to provide appropriate answers. Where, they were wrong, I corrected them. Thus this approach involved
traditional formative feedback which is usually from lecturer to student rather than vice-versa. I assumed that any defects in their knowledge would be corrected by the questions and answers process. However, merely asking students to provide answers to questions that had been set to them as an assignment alone, was not an adequate way of monitoring how much they knew and clarifying areas of misunderstanding. Nevertheless, the Law Department's Module Evaluation form's (see annex), section on seminars, revealed positive results. For example, 79% altogether ‘agreed’ and ‘mildly agreed’ that the seminars in the course assisted their understanding of the subject (see annex). I was however interested in applying more diagnostic approaches to monitoring students. This is discussed below.
THE period

Planned approach and underlying rationale

During the second semester of the 2005 / 2006 and the 2006 / 2007 academic years with coincided with my registration on the THE scheme and the submission of my THE portfolio, I was responsible for the delivery of a number of seminars on the criminal law module, which comprised of small groups of between 6-7, and often were 1 hour long. I was also responsible for the delivery of a number of seminars on the criminal justice module, which comprised of small groups of between 6-7, and often were 2 hours long.

I was keen on employing a more diagnostic approach to monitoring students learning. This led me to adopt two types of CATs in the context of my criminal law and criminal justice seminars: classroom quizzes and one minute papers. Both sets of tasks can be defined as diagnostic as opposed to formative or summative. According to Brown formative assessment is primarily
characterized by being continuous, involving mainly words and with the prime purpose of helping students improve, summative assessment instead tends to be the end point, largely numerical and concerned mainly with making evaluative judgements. In contrast, diagnostic assessment involves identifying changes that will improve the learning of current students before the class term ends. CATs are therefore essentially a form of diagnostic assessment. Harwood (1999) argues classroom assessment is:

"[Where] a professor...continually assesses students who are taking his or her class...classroom assessment techniques...identify changes that will improve the learning of current students before the class term ends."

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Gillespie, described Harwood's statement above as suggesting that classroom assessment is being used not in a summative or formative manner but in a more diagnostic capacity.\textsuperscript{16} In addition, according to Gillespie, the idea behind CATs is that they provide simple formative feedback to the lecturer and thus this can be distinguished from traditional formative feedback which is usually from lecturer to student rather than vice-versa.\textsuperscript{17}

This report intends to investigate the effectiveness of the two types of CATs selected in monitoring student learning, that is classroom quizzes and one minute papers. It begins with a step by step implementation of

monitoring activities, feedback on the monitoring process, progress notes and a summary of the implications these activities have for future practice. Underlying this approach is Kolb's experiential learning model which focuses on learning from reflecting on what has happened and on using these experiences as an incentive to new learning. 18

**PLAN:**
In this Teaching Cycle I decided to focus on classroom-level monitoring of student learning progress. The task involved implementing the following CATs:

1. Classroom quizzes.
2. One minute papers.

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Plan 1 Classroom quizzes.

According to Angelo and Cross:

College instructors who have assumed that their students were learning what they were trying to teach them are regularly faced with disappointing evidence to the contrary when they grade tests and term papers.  

In order to address this issue, they developed some written "instant" feedback techniques which they called classroom assessment techniques. The assessments are generally ungraded activities which focus on current course work. The goal is neither research in pedagogy nor evaluation of individual students. Rather, the goal is to measure the "current state" of the classroom. The goal of their work is to present assessment techniques which are brief, yet effective, and can be used quickly in the classroom.  

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I decided to apply the "instant" feedback techniques and to focus specifically on short classroom quizzes. Generally I adopted a similar structure for each and all of my seminars. This approach encouraged students to feel secure in that they knew what to expect every fortnightly. We began by making a recap on what we did during the last session. In this recap, students are given the opportunity to discuss any continuing problems they may have encountered. The next step then involved discussing the current assignment. In the final session, a general discussion of the current assignment was stimulated with the aid of the classroom quizzes.

Quizzes are essentially a fun way to learn. They can therefore be categorized as Game Based Learning since specific problems are placed within a play framework.\(^{21}\) Despite the widespread recognition of

the advantages attached to the use of games in elementary and secondary education, there is little evidence of their use in higher education. The main problem is perhaps the difficulty in accepting the notion that one can literally play games in a university setting and in the field of law. Nevertheless, previous experiences in medicine, a very conservative subject like law, highlighted the usefulness of game based learning. Students are motivated to pay attention through the game show format because it is unconventional, interactive and feels more like play than work. Yet it keeps focus on the subject matter. My specific reason for relying on quizzes was to monitor their progress. The main information I wanted to obtain from time to time was whether students were keeping up with the pace of instruction and were understanding all of the material that had been

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covered so far. For students whose pace of learning was either slower or faster than average or whose understanding of certain legal issues and principles was faulty, I could go through the topic again. It follows that because the purpose of such assessment is to facilitate or form learning for the purpose of correcting existing areas of understanding and not to assign a grade, it is can be referred to as a form Diagnostic evaluation, as already state above. Brown et al (1997) describe formative assessment as providing "feedback to students during the course so that they have an opportunity to improve". Quizzes offer a limited degree of formative assessment in that students use them to assess their performance. However, to be truly formative the assessment should incorporate feedback. Feedback in the context of my classroom quizzes, was provided orally by other

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students and myself as part of a group discussion during the final phase of each seminar.

My rationale for relying on oral quizzes to support delivery of my criminal law seminars as opposed to website delivered quizzes or written quizzes can be explained in the following way. First, in relation to website delivered quizzes, the fact that oral quizzes are conducted in a class situation is important since it brings people together to challenge, support or respond to each other. This process therefore needs active tutor participation. 24 Whilst second, I assumed that oral quizzes are more effective than written ones because the whole class knows who studied and those students who did not. The public nature of oral quizzes, therefore provides students with a strong incentive to prepare for seminars.

However, my experience with classroom quizzes is that a lot of effort is needed to implement them. This is because merely asking students questions is on its own insufficient since other factors need to be taken into account such as having the right atmosphere, the right personality, the requisite speed of asking questions, ideal seating arrangements, the students must be in the right mood, the office should be comfortable etc. Whilst observation by my peers confirmed the success of the quiz (see annex), I nevertheless felt drained by the whole process and this led me to consider other less labour intensive approaches which equally could achieve effective results in monitoring student learning (see below).

Progress notes:

The disadvantages of classroom quizzes became immediately apparent. They are:
1. Quizzes often test students knowledge from the point of view of the lecturer rather than from the point of view of students since the lecturer sets the question.

2. Because of their public nature, quizzes can be intimidating for students who are shy or lack confidence.

3. Quizzes focus on presenting education in a fun format, but this means a lot of energy is needed to make them successful.

4. The fun element of quiz can sometimes give students a misleading impression about the purpose of the seminar.

These disadvantages led me to introduce the second student monitoring mechanism, one minute papers, discussed below.

Plan 2: One minute papers
The one-minute paper is one of the most widely known and used classroom assessment techniques in higher education.\textsuperscript{25} This technique involves asking students to write brief answers to a couple of specific questions, usually during the last few minutes of class time, thus providing instant feedback from students on the lesson of the day. \textbf{If} properly focused, the minute paper is a manageable way of assessing how well students are learning. The effort it takes to prepare this assessment technique, the time it takes for students to respond, and the time and energy required to analyze the data are low.\textsuperscript{26} The minute paper technique is easily adaptable and can be used in lecture, lab, or any other type of classroom situation.


As a result of all of the above, I was immediately drawn to the idea of using one minute papers. In terms of implementation, I distributed the one minute papers in the final minutes of each seminar. The papers basically asked students to respond to variations of the following two questions (see annex):

1. What is the most important thing you learned today?
2. What is the muddiest point still remaining at the conclusion of today's class?

The first question was meant to direct students to focus on the big picture, that is, what is being learned, whereas the second seeks to determine how well learning is proceeding. In addition, I encouraged students to provide thoughtful, sincere responses to these questions. I also emphasized to my students, the

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purpose of filling these papers, which was to provide guidance for their own ongoing instruction. The seminars were conducted at fixed periods of about two to three weeks apart, at the end of each session, I collated all the filled in papers and analyzed them to detect a pattern of misunderstanding. I then clarified these muddy points and emailed my clarifications to the whole group (see annex).

Although both the quiz and the one minute paper have the same aim, which is to monitor student learning, during implementation, I however noticed some essential differences between the two. These are:

1. One minute papers require minimal effort to create and give sufficient time to address student needs. Unlike quizzes which generally require a lot of input.

2. One minute papers are more student focused, since they allow them to explain which areas they still do not understand (see annex). In this
respect, Cross and Angelo, stated that through the one minute paper, the teacher demonstrates respect for and interest in student opinion and encourages the student's active involvement in the learning process.28

3. One minute papers are more confidential than quizzes. Almer et al (1998) argue that anonymity is a strength of the Minute Paper.29 They therefore encourage the shy or less confident students to point out their areas of weakness (see annex).

4. One minute papers unlike quizzes are strictly geared towards learning.

5. One minute papers are more effective in promoting deep learning (see annex).


Progress notes:

From the point of view of what I wanted to achieve, the advantages of one minute papers over classroom quizzes were immediately apparent. They are:

1. One minute papers are essentially student focused and it was therefore much easier to tackle their specific areas of misunderstanding or uncertainty (see annex).
2. Because of the anonymous nature of one minute papers everybody participated in them (see annex).
3. One minute papers took less time to prepare.
4. One minute papers are more effective in promoting deep learning (see annex).

Feedback:

Different types of feedback were utilised and they included peer observations, a teaching diary and
student feedback in the form of the one minute papers (see annex). In relation to classroom quizzes, both peer observation and a teaching diary were utilised (see annex). In summary, the main conclusion from the 3 peer observations of my classroom quizzes was that it was a success since "students were engaged, they were well managed and the quiz helped reinforce learning and enabled the teacher to get a sense of student progress" (see annex). The teaching diary on the other hand contained a recording of my observations of student progress for each seminar (see annex).

However, looking back, I believe that the main disadvantage of both peer review and my teaching diary is that every thing is seen from the point of view of the observers and not from those of the students. Yet, the latter were the one's who needed the support. It was therefore the need to show respect for and interest in student opinion and encourage student active involvement in the learning process, that led me
to turn to one minute papers as a form of feedback. Another concern which led to the shift towards one minute papers was the need for objective, quantifiable outcomes that could be used to evaluate student learning. As expected they proved to be more effective than classroom quizzes since they specifically addressed the needs of my students and involved the whole group. However, one qualification to the above must be made: the classroom quizzes were conducted vis-a-vis first year students, whilst the one minute papers were conducted vis-a-vis second year students. Each technique was perhaps appropriate for the aforementioned focus groups. In otherwords, a teacher centred approach with the teacher asking the questions might be more appropriate for first year students who are new to the course and therefore may lack the required level of competence to identify areas where their knowledge might be weak. On the other
hand, one minute papers which are student centred may be more appropriate for older students who have the required level of competence to identify areas where there knowledge might be weak.

**Progress Notes:**
I switched from quizzes to one minute papers for my Criminal Justice Seminars during the second semester. As expected the participation rate was very high and I had a strong impression of being in tune with the progress of my students.

**CONCLUSIONS AND IMPLICATIONS FOR FUTURE PRACTICE:**
Monitoring students learning so as to foster deep learning approaches is an objective all lecturers should strive for. However as previously emphasized there is a difference between our expectations of how much has been learnt and the reality of how much is being learnt.
Ultimately in order for us to become more in tune with the progress of our students we may have to adopt techniques designed for such purposes. By doing this, we engage and empower our students to become deep learners. As is evident from the above discussion, both one minute papers and classroom quizzes are instrumental to this process. At the moment I am applying other CATs which aid in effectively monitoring student learning such as buzz-group activity, Think-pair share and exam questions and I hope to continue to utilise these and more as appropriate in future.
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