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Assessment: a tool for development and engagement in the first year of university study.

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Abstract

For most students assessment often defines their study and learning practice, yet there are few discussions in the literature on the first year experience detailing how assessment can be mobilised to develop and engage students in their first year of study. This paper presents the results of an audit undertaken at The University of Southern Queensland of the assessment associated with first year (termed level 1) courses. It is apparent that assessment has not been used to advantage to smooth the transition into university studies. The paper presents some examples of effective assessment practice to engage students and assist them in the development of self-regulatory skills, such as time management.

Introduction

Whether students study on campus or at a distance the transition into the culture of university can be complex and difficult (Lawrence, 2005). Krause, Hartley, James & McInnis (2005) indicate that although improvements have been made over the last ten years many students still have an uncertain start and one in four students will not stay at university. Contributing factors are those issues related to managing work and study. These issues have always been important for distance education students but are now also an issue for full time on campus students (McInnis &Hartley 2002), with at least 40% of students working part-time while studying full time. Taylor and Bedford (2004) in a study of staff perceptions of students' non-completion found that most staff believed the major contributing factors to non-completion were related to what students brought with them to university: their level of preparedness, motivation and their ability to self-regulate and manage time. These perceptions have been reinforced by Krause (2005) and confirmed by others investigating the predictability of performance of first year students (Zeeger, 2004; McKenzie, Gow & Scweitzer, 2004; Byrne & Flood, 2005). In particular, Nunn, MacDonald and Lowen (1992) after interviewing adult students, held that it may take months for them to organise themselves and their work to get the most out of study. The issues related to development of self-regulatory behaviour are not new in the literature on first year experience or retention in higher education. But strategies to address such issues are often elusive. Traditionally study skills programs at universities have been offered to all commencing students through stand-alone initiatives in orientation or in the early weeks of study. This is especially the case for self-regularity skills, such as time management. Yet Hattie, Briggs and Purdie (1996) after a meta-analysis involving over 1415 studies from across all education sectors assert that the evidence suggests that such skills are most effectively developed within a specific context, not as generic initiatives. So obviously strategies need to be embedded within the curriculum. But how is this best achieved.

It is generally believed and widely stated that assessment drives the student experience and hence student learning (Ramsden, 1992; Brown & Knight, 1994; Dunn, Morgan, O'Reilly and

Parry, 2004). This was best stated by James, McInnis & Devlin (2002, p 7) in their definitive study of assessment practice within the Australian Higher Education sector.

> *For most students, assessment requirement literally defines the curriculum. Assessment is a potent strategic tool for educators with which to spell out the learning that will be rewarded and to guide students into effective approaches to study.*

The central location of assessment within students' perceptions of learning and studying means that it could be a powerful tool to engage students and address self-regulatory skills such as time management. Yet despite high levels of activity within the first year experience, assessment has rarely been mobilised to address recurrent concerns within the first year of study, with the exception of general statements indicating that assessment should be early and focussed on the formative rather than summative (Gibbs 2003; Thomas and Yorke 2003).

This paper reports on a preliminary analysis on the nature of assessment within the first year of undergraduate studies in a large regional transmodal university and presents some examples of practice that allow for early student engagement and development.

Common practice in first year assessment

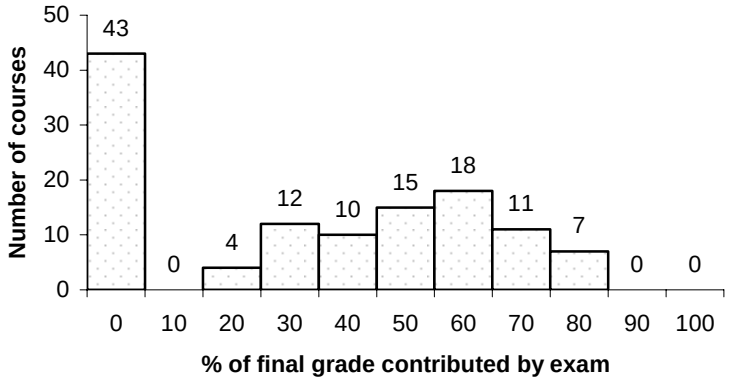
This study was undertaken within the context of a large regional Australian university in which 70% of the 26 000 students study by distance and/or online learning. Each course at the university is required to define its curriculum, including assessment practice, using the course specification. This specification contains information on the mode of delivery, number, timing, weighting and nature of assessment. To investigate the nature of assessment within first year, the course specifications of 120 level 1 courses were audited. Of the 120 Level 1 courses surveyed, 64% were assessed by final examination (Table 1), with 16 courses including computer marked multiple choice types of questions in these final examinations.

Table 1: Percent of Level 1 courses with exams in 2005 (total number of courses)

	Level 1 courses
Arts	47% (47)
Business	100% (16)
Education	43% (23)
Engineering	86% (14)
Sciences	85% (20)
USQ total	**64% (120)**

In a breakdown of those courses which used a final examination, it was clear that there were significant disciplinary differences (Figure 1). Courses within the Faculty of Arts (which includes Theatre, Media Studies, Music, Creative Arts as well as more traditional arts subjects) had low levels of examination use and low weightings for the examinations when they were used. These weighing were usually 30% or less. On the other hand courses within the Faculties of Business, Engineering and Sciences had high levels of examination use and very high weightings for the examination. These programs have significant numbers international students and students studying by distance education, compared with Faculty of Arts students.

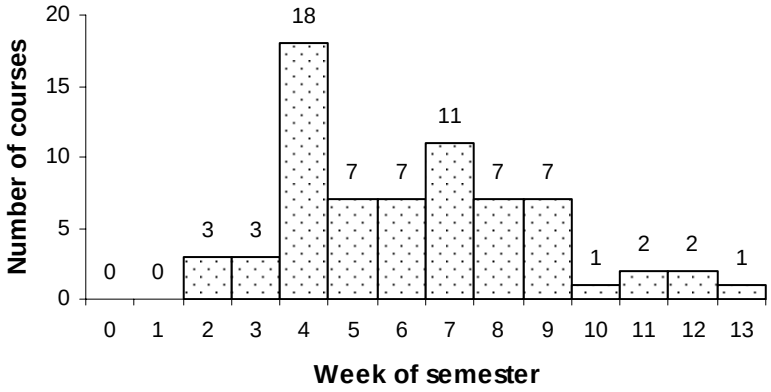
Figure 1: Number of level 1 courses with different exam percentage weighting.



If the number of assignments separate from exams were examined, eighty nine percent of courses had between 1 and 4 assignments: 45% of courses had 1 or 2 assignments, 33% had 3 assignments, 11% had 4 and 11% had more than 4 assignments. Overall, these assignments involved written tasks with the traditional essay still predominating, although some different practices were in place for the first assignment. For level 1 courses the first assignment predominately occurred in week 4 (the week of the last day to drop course without financial or academic penalty – DEST census date), although some courses did delay the first assignment considerably into the semester (Figure 2).The weightings for individual assignments to the final grade ranged from 5% to 50%. Courses that had no examinations usually had higher weightings for the first assignments than courses with examinations. The course audit did not reveal the extent to which formative assessment was used in first year courses, but in an independent survey of staff (not reported here) only 7 out of 30 indicated that they used formative assessment tasks within their course.

Although the majority of courses audited attempted to complete at least one assessment item by the 4th week of semester, only six cases included very early assessment items. The assessment scheme of one of these courses was examined in further detail.

Figure 2: Timing of the first assessment item for courses offered in first year.



Assessment practice for engagement

The course investigated in detail used a range of assessment strategies including an early first assignment. This course was a service mathematics course for students enrolled in science, engineering and information technology. It was offered on campus (250 students) and at a

distance (550 students) and had a complex curriculum structure allowing students different pathways through the content (Taylor, McDonald and Mander 2004). This structure required students to be well organised to successfully complete the course. The course's assessment scheme contained an early reflective planning assignment, two linked summative written assignments, series of small skilled based online quizzes and a final examination.

The early assignment

This compulsory assessment (Box 1) is completed in week 1 or 2 and has three parts: a reflection on past mathematical and learning experiences, questions associated with essential knowledge of the course, and a study plan. The assignment is designed to force engagement with the students, to ensure that students reflect upon their past study experiences and commence self management of their tertiary environment. Many students in this course have had very poor previous experiences with mathematics. The reflective questions also confirm (or otherwise) to the tutors that students have the skills and knowledge necessary for transition to tertiary mathematical studies, allowing for follow-up with students at risk if necessary. The study plan helps them to organise and take responsibility for their own progress and the timing of the assignment ensures early contact with their tutor, especially essential for distance education students, who do not have the prompts for learning that on campus students' experience (eg lectures, tutorials).

This assignment is a cross between summative and formative assessment and is termed a 'hurdle' in that although students are required to complete it (compulsory), it will not contribute any weight to their final grade. Later assignments in this course have components that follow up the reflective and planning activities with further reflective activities to ensure that students know and acknowledge their progress (or otherwise) within the course.

Students have mixed feelings about this assignment and are often surprised by its reflective and discursive nature, especially in a mathematics subject. Yet in a course evaluation undertaken 8 weeks after commencement of the course 69% of students indicated they were using their study plan to assist with their study requirements. One student said:

> *Making us do a study plan. I thought it a bit stupid and irrelevant at first but (it) was in fact the most useful and helpful thing for maintaining the workload evenly throughout the semester*

Assessments designed to keep students on task

In these assessment tasks mathematics skills are self-assessed by the student using a series of online quizzes (multiple choice and short answer questions). Immediate feedback is given following an online submission allowing students to monitor their own progress. Students have access to multiple, alternative quizzes so that they can achieve mastery by attempting a different version of the quiz several times before progressing to the next module. Quizzes are completed online at times determined by each student and reported in their study plan in their first assignment (described above). Some quizzes in the earlier modules are compulsory but do not contribute to their final grade, quizzes later in the course are summative and contribute 6% of the final grade. Students are required to complete certain groups of quizzes by specific dates throughout the study, ensuring that the stay on track throughout the semester. Before this procedure was instituted, students, especially distance education students, were not completing quizzes until close to the final submission date, if at all. Students now complete and practice their mathematical skills regularly in preparation for later summative assessments.

Box 1

Assignment 1 Due end of week 2

This assignment involves a reflection on how you learn mathematics and formulation of a study plan. Details are included at the end of the study book. To complete the assignment you will need to read the sections on *How To Study Maths Successfully* and *Producing A Plan For Study of Foundation Maths* located in the **Toolbox** section of this book.

Part 1

Write a few words about your past mathematical experiences and how you feel about studying *Foundation Mathematics*. Do you think your past experiences might affect your learning in this subject?

Part 2

Develop a study plan for *Foundation Mathematics* by completing the proforma on the following page or using the plan you developed in Activity 2 in the Foundation Mathematics Toolbox.

Part 3 (11 questions, examples only given)

Answer the following questions:

- If you have any concerns about this course, who should you contact and how would you contact them?
- What does 'due date for an assignment' mean (see the Assessment Notes in the Course Specification)?
- Only under special circumstances are late assignments permitted. What do you need to do if you anticipate that you will be late submitting an assignment?
- List the assessments that you are required to complete for this course and give the corresponding due date for each. Make sure that you include this information in your Study Plan.
- Please confirm by signing the declaration below that you have access to the internet and are aware that participation in discussion groups is a compulsory part of the assessment for this course.

Signature: Date:

Students who are not able to fulfil this requirement should contact the course leader.

Model of assessment for students in transition

Calls for early and formative assessment within first year are common, but examples of this practice are rare both in the literature and in practice, as evidence by the audit above. The assessment examples described, which have evolved out of the author's experience with curriculum design for distance education preparatory mathematics courses (Taylor and Mohr 2001) and the specific need to engage with first year distance education students can be expanded into a model for assessment in any first year course. For such a model to be effective it must balance the conflicting issues of engaging students and providing assignment feedback with managing large numbers of students with diminishing resources, especially marking resources. Figure 3 presents such a model for an assessment scheme for a first year course. It focuses principally on the nature and contribution of the earlier assignments, but presents possibilities for later assessment tasks, and is described below.

First assignment

This assignment should be offered within the first two weeks. It could be brief, reflective, looking backwards and/or forwards, produce a plan for study or a learning contract. It could include a self-assessment of readiness skills. To enable the students to get feedback and make contact with their tutor as soon as possible, the marking time should be short. This will allow more extensive marking resources to be allocated to later objective-driven assessment tasks. The weightings for these assignments could be zero, but compulsory (a hurdle).

Second assignment

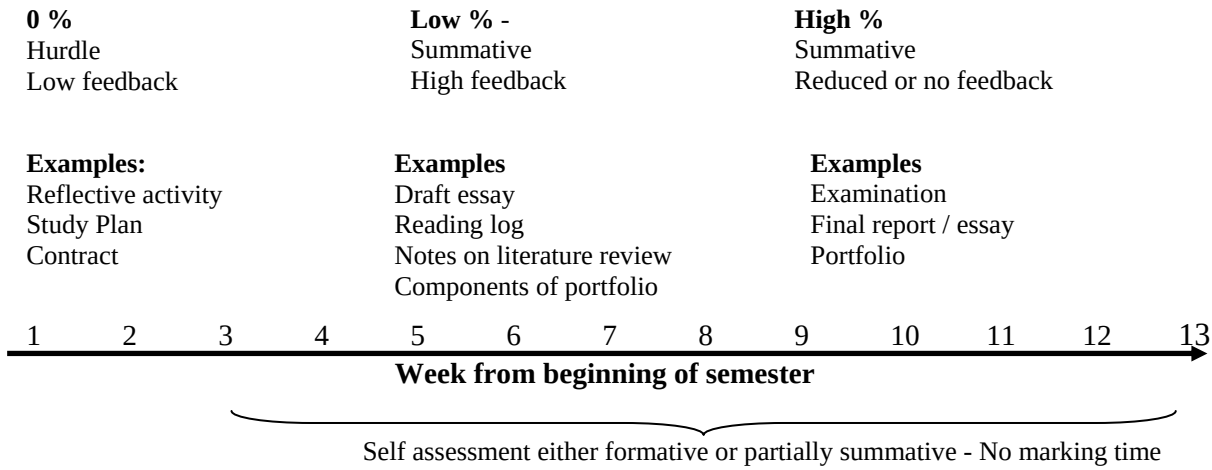
This assignment can be summative but developmental. It could have a low weighting, but be allocated longer marking times so that significant feedback could be provided. The assignment may be a draft for a later assignment (eg essay), a reflective reading log,

commencement of a portfolio, laboratory reports or online discussion group submissions. Weightings should not be high. Linkages with later assignments should be explicit.

Later assessment tasks
These are more traditional assessment tasks and could include examinations, final essay, complete portfolio. They would have close links with previous developmental assessments. The weight for these assignments would be high, but marking time lower if feedback is reduced, as may be expected towards the end of the course. This could only occur if earlier assignments had included significant levels of developmental feedback linked with these later assignments.

Continuous self- assessment
Continuous assessment should be incorporated in the course from week 4 (at least).This ensures that students participate regularly rather than only at assignment and examination due dates. Designed well and structured as self assessment rather than tutor driven assessment, the marking time would be minimal or zero, especially if online. Incorporation of such learning / assessment tasks can benefit all students, but particularly assists distance education students, who do not have external prompts for study outside assignment submission dates. Such assessments could be summative (with low weighting), formative or hurdles.

Figure 3: Strategies for assessment



Conclusion

The core of any assessment plan involves three principles. One associated with development and learning, one associated with measurement of outcomes (validity and reliability) and one associated with academic standards (James, McInnis and Devlin 2002). Yet today issues associated with measurement and standards are more commonly addressed at the expense of the need to develop and engage effective student learning (Gibbs, 2003). This need for effective learning skills is very high in first year students; especially those studying at a distance, yet in the audit of first year courses few appear to have developed strategies to fill the need in the area. This is especially apparent within the science and business based audited courses where both summative and formative assessments were few, and examinations predominated. The proposed model and examples utilize the belief that assessment drives learning and extend this to suggest that assessment can direct transition to university, through an extensive reflective first assignment.

The challenges facing first year teachers and curriculum designers are many, often exasperated by large enrolments and the pressures of dwindling resources. Currently, designers are torn between the competing tensions of discipline traditions and rising plagiarism on the one hand, compared with implementation of innovative assessment strategies on the other. The solutions within an individual first year course will be neither singular nor simple, but should raise questions not only about the nature of the assessment within other courses in first year, but about the nature and purpose of assessments within consequent years of study.

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