

## **Paper 15: The verity of summative MCQs assessment in first year law courses within a law program**

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This paper reports on one aspect of an investigation undertaken by the authors on the verity of multiple choice questions (MCQs) as a teaching and learning and assessment tool in law courses within a law program. The aspect which is the focus of this paper is that of the use of MCQs for summative assessment in core law courses.

The other aspect of the investigation regarding their use for formative assessment is the subject of another paper, and this paper builds on theoretical foundations discussed in that paper.

The investigation was primarily triggered by debate regarding their use in law and specifically the poor reputation suggested by some regarding their use (Higgins and Tatham 2003, p.2; Nichol 2007, p. 54).

They are viewed by some as a soft option leading to a

heightened unrealistic performance (Higgins and Tatham 2003, p. 3), an option not suited to law, or an inappropriate tool in that they encourage surface learning and fail to address deeper higher order learning (Selby, Blazey and Quilter 2008, p. 207). As Case and Donahue state, “they are viewed as less intellectually rigorous than essay questions and less realistic in their relationship to the actual practice of law” (2008, p. 372). On the other hand MCQs have long been used with success for both formative and continuous or final summative assessment in many disciplines and on many levels of learning (see for example Roberts 2006; O’Dwyer 2007, who uses the term “terminal”, rather than “final” assessment). Both authors have used MCQs over the last three years as components (cf totality) of summative assessment to assess and grade students in core law courses. As such a secondary trigger for the investigation was to inform their continued use and determine where, if at all, MCQs fit within current views in legal education pedagogy. This paper will compare the results achieved by Contract Law students when MCQ tests were substituted for a research assignment. Both the general performance, as well as the performance of the top 20% and those students who failed the course will be reported upon.

### **Summative MCQ assessment: pedagogy and sustainability.**

Arguments regarding the use of MCQs for summative assessment, for and against, abound in the literature. Many of the principal ones are canvassed by Biggs and

Tang (2007), Selby et al (2008) and Higgins and Tatham (2003).

Disadvantages repeatedly mentioned in the literature include the following:

Biggs and Tang point out that assessment choices affect student approaches to their learning. They argue that the use of MCQs encourages a rote learning approach and is “an enemy of understanding” (Biggs quoting Gardner 1993, p. 204). This problem is exacerbated when MCQs are used to assess recall as opposed to functioning knowledge which, they believe, is better assessed using alternative methods such as problem-based short answer and essay questions (Biggs and Tang 2007, pp. 197, 234, 238);

they encourage game playing in that students adopt methodologies suited to MCQ exams, for example guessing by a process of elimination or choosing the longest alternatives as the correct answer (Biggs and Tang 2007, pp. 174, 203);

- they can be time consuming to construct properly; and that

they present difficulties for authenticating examinees when tests are undertaken remotely on-line.

Advantages of MCQ summative assessment commonly mentioned include the following:

MCQs can be written to all levels of Bloom’s *Taxonomy* and so can test both declarative and functioning knowledge (Biggs and Tang 2007, p. 72);

MCQs offer a superior advantage in terms of assessing knowledge of content (breadth of coverage) (Case and

Donahue 2008, p. 373; Selby et al 2008, p. 204, Biggs and Tang 2007, p. 204). They also serve to motivate students who will be more likely to cover the whole of the course if they know that it is potentially examinable. Assignments only cover specific areas as do short answer questions on an exam. Having a data bank of questions can ensure a greater breadth of coverage in the summative assessment of the course, particularly in exam conditions with University imposed time limitations (2 hours in the case of our Institution); the cost-benefit gains of rapid and flexible assessment (Biggs and Tang 2007, pp. 203, 232), consistent marking and resource saving, including effort toll (Selby et al 2008, p. 204). These considerations are attractive with burgeoning student numbers and the consequential squeeze on resources. As Nicol states “larger student numbers, reduced resources and increasing use of new technologies have led to the increased use of MCQs as a method of assessment in higher education courses” (2007, p. 53). He further points out, referring to Bull and McKenna (2004), that “computer networks enable more flexibility in the delivery of MCQs (e.g. with delivery at times and places more in tune with student needs) and, with appropriate software, they automate and speed up marking and the collation of test results. Compared to paper-based MCQs, the use of online computer-assisted assessment can significantly reduce the burden associated with testing large student cohorts” (Nichol 2007, p. 53). However Biggs and Tang caution that the utility of MCQs can be attractive arguments for justifying their use in circumstances where alternative assessment is just as efficient (2007, p. 203);

MCQs are marked objectively. This eliminates the subjectivity that can affect the marking of other forms of summative assessment such as problem based and essay short answer questions. This is exacerbated when more than one person is marking the assessment items. Biggs however questions the validity of this assertion of objectivity on the basis that subjectivity can affect the writing of MCQs, particularly when used for assessing deeper higher order learning objectives (Biggs and Tang, 2007, p. 203);

MCQs have a diagnostic value. Where MCQs are used as items of progressive assessment during the course of a semester, results of tests can be used to identify areas in which students are having problems. Even where MCQs are used on the final exam, these results can be used to refine the test bank of questions for future exams;

Boud (2000, pp. 152, 155.) argues for the need for a new conception of sustainable assessment for lifelong learning. He writes that assessment has two main purposes: certification (summative assessment) and aiding learning (formative assessment). He notes that both influence learning, with summative assessment providing the de facto agenda for learning. In terms of a foundation law course such as Contract Law, which provides a basis for many later courses, it is important that students have an understanding of the whole course. MCQ, because they assess a large number of topics, reduce the likelihood that someone will be lucky or unlucky in the selection of topics (Case and Donahue 2008, p. 373) and encourages revision of the entire course (Biggs and Tang 2007, p. 204).

**A case for using MCAs as summative assessment in Contract Law. A comparison between performance in MCQ and other forms of assessment.**

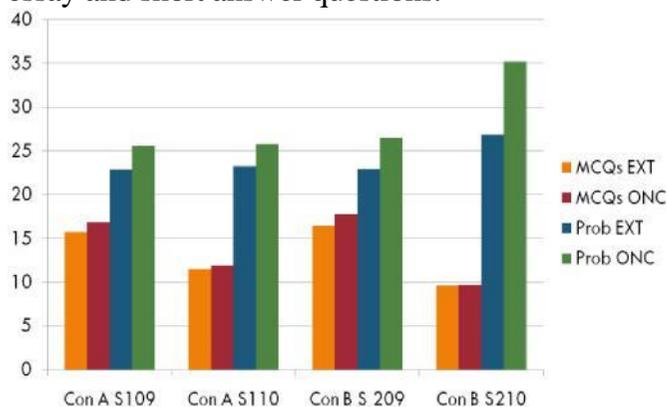
The method used to test the verity of MCQs as summative assessment was a statistical quantative analysis of average student performance in summative assessment items in Contract Law courses.

Performance in research assignments and short answer questions (problem based and essay) has been compared to performance in MCQs. The analysis was based on a data set of student performance in Contract Law A and B over a two year period. Student performance was tracked in individual components of summative assessment: assignments, short answer exams (problem based and essay questions) and MCQ exams.

In 2009, the Contract Law courses (Contract A and Contract B) used a combination of research assignment (30%) and an exam (70%) for summative assessment. The exam consisted of two parts: Part A comprising 30 MCQs (30%) assessing knowledge from all modules of the course; and Part B comprising two problem questions (40%).

Primarily in response to staff and student concerns about the ability of first year Contract Law students to conduct legal research, the assessment for both Contract Law courses was replaced by two online tests of MCQs (comprising 10% and 20% respectively) in 2010. The format of the exam was similar to the previous year, however Part A comprised only 20 MCQs (20%) and Part B comprised two problem questions (50%). In Contract A the questions were approximately 50%

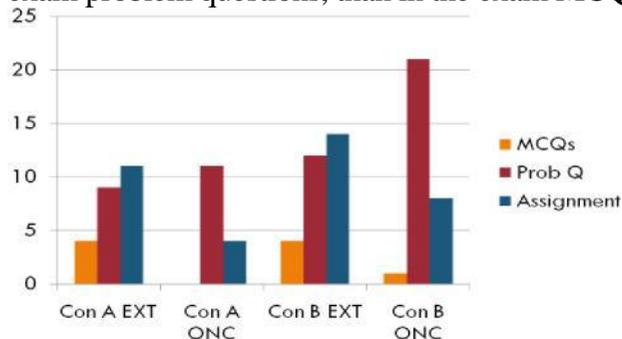
foundational and 50% deeper higher order questions for all pieces of assessment. In Contract B the questions were approximately 30% foundation and 70% deeper higher order questions for each piece of assessment. As the following analysis discloses, in Contract A the overall results improved marginally after replacing the assignment with MCQs. However it was so marginal an improvement that it is not statistically significant. In Contract B, the overall results were significantly lower after replacing the assignment with MCQs. There was little difference between on campus and external student performance on the MCQs, however on campus students performed better than external students on the essay and short answer questions.



**Table 1. Comparison of results of Contract Law A and B in 2009 and 2010.**

Further analysis was undertaken of the data in 2009. Results of the top 20% of students were analysed and a comparison was made of student performance between the 3 methods of assessment – the assignment, MCQs and problem questions. This disclosed that the majority

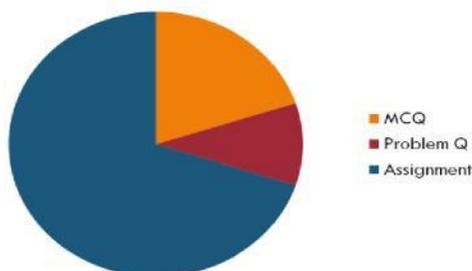
of the top 20% of 2009 students in both Contracts A and B performed far better in both the assignment and the exam problem questions, than in the exam MCQs.



**Table 2. Comparison of best results in assignment, MCQs and problem questions for top 20% of students**

Results of the students who failed are not as instructive. Whilst they showed a strong bias in favour of the assignment, this was due to the fact that several students completed the assignment and didn't sit the final exam.

**Breakdown of F students**



**Table 3. Comparison of best results in assignment, MCQs and problem questions for students who failed the courses**

### **Conclusions**

The data analysed for Contract Law showed that MCQs were not a "soft option" in terms of assessment when compared to results for other forms of assessment.

Indeed, where more deeper "higher order" questions were asked in Contract Law B in 2010 results were significantly lower than in the previous year where a research assignment was used instead of MCQs. The results did not show any bias towards MCQs in lower performing students and students who failed the course. The results showed a slight bias in achievement by distance students in MCQs and may evidence a need for more intervention with these students in terms of problem solving and essay writing.

The use of MCQs also satisfied our aims that all aspects of the course could be tested. Being a first year course which is a foundation for later legal courses, there were certain key concepts in Contract Law where it was desirable to learn these concepts by rote. However the overall key remains developing questions at an appropriate level to test higher order, as well as core, concepts.

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