

The Impact of Changes to Finance-Major Assessment Structures on Student Engagement and Success

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Analysis of assessment activities that encourage student engagement and attainment of higher-order cognitive outcomes within Bloom's Taxonomy (deep learning; Anderson & Krathwohl, 2001) supports greater use of individual and group presentations, research reports, and open-book exams. Consistent with this analysis this paper outlines changes made to the assessment structures of three final-year finance-major courses and details the impact on student engagement and success. It was found that the changed assessment structures were associated with enhanced student engagement, satisfaction and success. It was also found that the changes to the forms of assessment enhanced the development of students' verbal and written communication abilities and did not detract from the quantitative emphasis required of finance majors.

In the early 2000s the Applied Finance discipline at the University of South Australia responded to two major concerns regarding its finance major: student feedback evidencing low student satisfaction with final-year courses, and high student failure rates in these courses. Given both of these concerns, it was decided by the group that assessment would be the focal point for improving learning satisfaction and outcomes. To facilitate a review of the suitability of the assessment structures in each of the finance-major courses comprising the University's three-year undergraduate Bachelor of Applied Finance degree, funding was applied for and awarded under a University of South Australia Teaching and Learning Grant. The resulting modifications to assessment in the final-year finance major courses are part of the outcome associated with the grant report.

In keeping with the University's promotion of a student-centered perspective on teaching and learning, suitability was defined in terms of the potential impact on student learning outcomes and satisfaction rather than attempting to measure teaching effectiveness. This analysis of suitability required consideration of the "fitness for purpose" and the transformation qualities of different forms of assessment. Fitness for purpose defines quality strictly in relation to the purpose of the education service/teaching and learning materials.

First, a set of qualitative characteristics or benchmark criteria against which to make these judgments was established. This comprised: specifying the characteristics desired of finance graduates, based on survey evidence of the core concepts and skills required by employers and as specified by the University of South Australia's Graduate Qualities; and recognition that the concepts and skills required of finance majors may be linked to learning outcomes associated with specific levels of cognitive development within Bloom's Taxonomy (Anderson & Krathwohl, 2001). As well as having a firm grasp of application when learning undergraduate finance,

students are expected to engage mainly in the higher-order levels of Bloom's Taxonomy—analysis, evaluation, and synthesis (Anderson & Krathwohl, 2001). This supports a focus on teaching and learning arrangements, especially changing assessment structures to encourage a deep approach to learning by the student.

Second, evaluation of existing assessment structures was undertaken against these benchmarks. Third, a revised assessment structure displaying greater 'fitness for purpose' of assessment comprising changes to the coursework assignment and final exam format was selected. Finally, these changes to assessment were evaluated, based on student course evaluation scores and student success rates. The following sections of this paper provide a brief outline of this process.

Review of Assessment Structures

In determining the fitness for purpose of alternative assessment practices an institutional perspective was followed, with the objective of improving the fit with the requirements of associated institutions and interest groups (Ashcroft & Foreman-Peck, 1994). This included: requirements that were institution-specific, such as assisting in the development of the University of South Australia's Graduate Qualities; discipline-based requirements, reflecting accepted andragogical/pedagogical perspectives; and consistency with assessment practices specified by professional organizations and licensing bodies.

With respect to the transformation role of assessment, it was necessary to identify assessment alternatives that support student learning consistent with the achievement of higher-order educational outcomes such as those defined in Bloom's Taxonomy, cognitive domain (e.g., see Taylor, Goles, & Chin, 2002). The cognitive school's focus on the significance of the learner in the learning process (Curzon, 2000) provided a useful structure within which to consider

relevant aspects of university level assessment in finance-major courses. In addition, the cognitive school's focus on the learner, with recognition that student-centered learning may be actively applied and related to life experience (a common requirement of adult learners) (Smith, 1998), supported this preference.

Applying the above foci, the review of assessment required consideration of the following questions. What attributes/qualities should be developed by a finance-major graduate? What forms of assessment activity are best suited to the development of the cognitive abilities of finance-major students? Are the current assessment activities in the finance-major courses appropriate to the development of a graduate quality profile best suited to finance-major graduates?

An exploration of these questions (McIver, Lennox, Burrow, Nguyen, & Bredon, 2004) reflected on: alternative definitions of the discipline of finance and its methodology, including its relationship to microeconomics, mathematics and statistics; survey evidence on the core attributes that students generally need to acquire from the undergraduate finance major for future employment (see column one of Table 1); and the characteristics associated with student success in undergraduate finance courses, including the importance of mathematical/quantitative methods. This allowed the establishment of links between the knowledge, skills and attributes required of a finance-

major graduate and the six University of South Australia Graduate Qualities (see columns one and two of Table 1), and the assessment structures that can best promote student engagement with activities that encourage deep learning.

Cognitive theories of learning imply that learner activities are a key component in course design and place substantial emphasis on interaction, particularly collaborative learning, as this requires an active role on the part of the learner. These approaches are thought to encourage the development of higher levels of educational outcome as defined within Bloom's Taxonomy (i.e., deep learning) (Hartley, 2000; Lyall & McNamara, 2000; Mazoué, 1999; Ramsden, 1992; Rosie, 2000; Smith, 1998; Wee & Chen, 2001). The cognitive school's approach supports forms of assessment embodying: learning by doing and the use of problem-based learning approaches; project work, including group reports; and case study approaches that provide realistic assessment tasks (McIver et al., 2004).

As problem-based learning includes assessment approaches that encourage active and long-term individual involvement with the learning environment (Spronken-Smith & Harland, 2009) it can be particularly useful in developing students' expertise with quantitative material of the type found in finance courses. Group work/projects encourage active participation by students in the learning process and

Table 1

<i>Core Attributes of Finance-Major Graduates and Associated University of South Australia Graduate Qualities</i>	
Core attributes ^a	Graduate Quality ^b
Decision-making	(1) Operates effectively with and upon a body of knowledge sufficient to begin professional practice (3) Is an effective problem solver
Written communication	(6) Is an effective communicator
Computer literacy/skills	(1) Operates effectively with and upon a body of knowledge sufficient to begin professional practice (2) Is prepared for life-long learning
Oral communication	(6) Is an effective communicator
Mathematics/statistics	(1) Operates effectively with and upon a body of knowledge sufficient to begin professional practice (2) Is prepared for life-long learning
Interpersonal skills	(4) Can work as an individual or as a member of a group
Ethics	(5) A commitment to ethical action and social responsibility
Social etiquette	(4) Can work as an individual or as a member of a group

Note. ^a Ranking of graduate core attribute reflects views of finance faculty in Moore (2000), and the characteristics used in the survey-based papers of Collier and Wilson (1994), Graham and Krueger (1996), Baker and Phillips (2000), and Moore (2000). ^b The University of South Australia ascribed Graduate Quality numbers shown in brackets do not necessarily reflect a relative ranking of these graduate qualities. (McIver et al., 2004)

facilitate both teamwork and communication outcomes (Hartley, 2000; Ramsden, 1992). Finally, case studies may be designed so as to allow students to relate theory to practice and experience, requiring the student to provide evidence of the ability to engage in decision-making and communicate effectively (McIver et al., 2004). This can assist students to integrate both the theoretical and quantitative material common in the finance discipline.

The review of existing assessment structures matched each assessment activity against the desired graduate qualities profile and the forms of assessment that encourage deep learning. This identified that the existing assessment activities comprising coursework assignments and a closed-book final exam had a high quantitative component which was generally consistent with the development of the set of attributes desired of finance graduates and also with engaging students in deep learning.

However, also evident were significant deficiencies with the existing assessment activities. The limited use of individual and group presentations did not support the development of students' verbal communication skills and the quantitative emphasis of assignment tasks imposed a heavy reliance on the final examination to assess students' written communication skills. Also evident was insufficient emphasis given to ethical considerations in finance. These deficiencies are likely to limit the engagement of students in lifelong learning and inhibit their development of a long-term career in the finance sector.

Changes to Assessment Structures

The review of existing assessment structures identified that change was needed to ensure a better fit of assessment activities to the development of the attributes of finance graduates and to improve student performance (Greer, 2001). It was also evident that the assessment activities needed to be modified to achieve the objectives of enhancing student engagement, improving student communications skills, and encouraging students to develop a capacity to engage in lifelong learning.

The major modification made to the assessment structures was to reduce the quantitative emphasis in the coursework assignments and to increase this aspect in the final exam. In addition, the coursework assignment format was changed to be more heavily based on activities related to those likely to be undertaken in employment—"authentic assessment" (Svinicki, 2004; Wiggins, 1998). This includes industry-style applied group research reports, which give students the opportunity to demonstrate their integration of the set of knowledge, skills and analytic capacities required of the discipline (Cox & Harper, 2000).

The presence of group assessment, and collaborative learning based on teams, was seen as important to encourage those higher levels of educational outcome defined within Bloom's Taxonomy (Mazoué, 1999; Wee & Chen, 2001). For example, case studies were designed to allow students to relate theory to practice and experience by requiring students to provide evidence of their ability to engage in decision-making and effectively communicate both theoretical and quantitative material. As this less time-constrained form of assessment encourages group activity and active student participation in the learning process facilitating both teamwork and communication outcomes, it supports the development of the skills suited to lifelong learning, a key area for finance-major graduates.

To overcome problems associated with the need to move assessment of the more technical/quantitative aspects of the course content from assignments to the final exam, an open-book exam format was adopted. By giving access to text and reference material to complete exam questions, this format reinforces in students the recognition that finance professionals engaged in effective problem solving need to be familiar with and utilize a range of resources. The open-book exam format also overcomes some of the limitations that a closed-book format imposes on students to memorize and apply the large quantities of formulae and mathematical models common to finance courses and also allows more complex examination questions to be set than is possible under a closed-book examination format (Habeshaw, Gibbs, & Habeshaw, 1993).

As students are precluded from receiving outside assistance in the preparation of their exam answers, the open-book format is able to provide evidence of each student's development of the graduate qualities specified for a finance-major, ensure a credentialing role in assessment (Habeshaw et al., 1993), and is consistent with the accreditation practices of professional bodies associated with the finance industry. Finally, the use of open-book exams can encourage students to develop a course portfolio as both a learning resource and as a reference source for the final exam and beyond the end of the course.

To facilitate implementation and evaluation, the modified assessment structure as detailed above was adopted in the three final-year courses of the finance-major. For two established courses—Investment Banking and Project Finance (IBPF) and Portfolio and Fund Management (PFM)—this involved changing existing assessment structures. For a third course—Financial Risk Analysis (FRA)—offered for the first time during the semester, the modified assessment structure was implemented from its inception.

Impact of Changes to Assessment Structures

Evaluation of the impact of changes to the assessment structures of the three final-year finance-major courses was primarily based on a range of student performance and satisfaction indicators. A summary of these indicators for each of the courses between 1999 and 2009 is provided in Table 2.

From a comparison of the indicators in Table 2 it is reasonable to conclude that the modified assessment structure had a positive impact on both student performance and student satisfaction. Prior to the introduction of the coursework research/industry style group assignments and the open-book exam format, course failure rates were relatively high for end-of-degree courses (e.g., 33% for IBPF in 1999 and 34% for PFM in 2004). Following the introduction of the modified assessment structure, the failure rate in both these courses fell significantly (e.g., 14% for IBPF in 2007 and 16% for PFM in 2008). Since the introduction of FRA with the modified assessment structure student failure rates have been 10% or less.

The impact of the changed assessment structures has, perhaps, been more significant on student satisfaction as reflected in the comparative scores of student responses to the University of South Australia Course Evaluation Instrument (CEI) Question 10 (overall satisfaction with the quality of the course). For example, following the introduction of changes to assessment in IBPF in 2006, the score on CEI Question 10 increased significantly, moving from the second lowest quartile into the top quartile. A similar improvement occurred for PFM with the score moving from the bottom quartile to the second highest quartile and for FRA the score has been fairly consistently in the top quartile since the introduction of the course.

There was also evidence that the students had a

more positive view of the relationship between the modified assessment structure and their development of the Qualities of a University of South Graduate. Following the introduction of the modified assessment structures in 2006, there was a significant improvement in the student scores relative to other courses in the Management and Commerce area for the CEI Question 8 (assessment related to graduate qualities). For IBPF the score moved from the second bottom quartile to near the top of the highest quartile and for PFM the shift was from the bottom to the second top quartile.

From a course coordinator perspective, the modifications to assessment practice produced a number of benefits including: the management of student expectations, students taking more responsibility for their learning outcomes, improvements in course progression rates, student perceptions regarding their learning outcomes and overall student satisfaction with the course.

In addition to the lower failure rates reported in Table 2, the modified assessment structure resulted in the final grades of each student cohort being more evenly spread and a greater proportion of students obtaining a final grade that was consistent with their expectations. An explanation for this outcome is that as opposed to the previous narrowly focused quantitative format, the more complex nature of the group assignment component of the modified assessment structure enabled students to draw on a wider range of skills, knowledge and practical experiences in completing the assessment. Further support is provided by some students reporting that being encouraged to develop a course portfolio from their assignment work together with the open-book final exam format helped them to recognize, and be more likely to take on, responsibility for the success or failure of their learning outcomes.

Table 2
Indicators of Student Performance and Satisfaction^a

	Previous Assessment Structure	Modified Assessment Structure
Student Performance (failure rate %)	IBPF – 24-33% PFM – 26-34% FRA – n.a.	IBPF – 14-16% PFM – 16-18% FRA – 10%.
Student Satisfaction ^b	IBPF – 2nd lowest quartile PFM – Lowest quartile FRA ^c – n.a.	IBPF – top quartile PFM – 2nd highest quartile FRA – top quartile

Note. ^a Only includes course offering where the co-authors co-ordinated and determined the assessment. ^b Student satisfaction reflects student responses to the University of South Australia Course Evaluation Instrument Question 10 (overall satisfaction). The quartile representation is based on the average Likert score for responses to the question relative to scores of other courses in the Management and Commerce area. Thus, a “lowest quartile” result indicates a relative rating of student satisfaction for the course in the lowest 25% of all courses offered in Management and Commerce. ^c Revised assessment structure applied from the first offering of Financial Risk Analysis (FRA).

Support for the positive impact of the open-book exam format on student satisfaction comes from reduced numbers of student complaints regarding their perception of the fairness and topic coverage of the final exam questions. Furthermore, the course coordinators reported that the student complaints that did occur were able to be better resolved through reference to the association of exam questions with the course structure, references, and teaching and learning resources (e.g., tutorial content).

Conclusion

This paper outlines the process and benefits of using reflective practice in determining whether, where and how to change assessment practice, and its effectiveness. Both in application and evaluation, efforts outlined to improve the fitness for purpose and transformation qualities of assessment in the final-year finance-major courses at the University of South Australia appear to have been successful. This was achieved by making significant changes to the nature and emphasis of both coursework and examination assessment in these courses. A major component was moving the quantitative emphasis of assessment from assignments to the final exam, the adoption of research-based group assignments and the introduction of an open-book exam format. Evidence of improvements to student evaluations and performance, indicating greater student engagement, support these changes. Given these findings it is expected that a similar review and change of assessment structures would be beneficial for the outcomes and engagement of students in other disciplines, including the related disciplines of economics and accountancy.

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