

Challenges and Opportunities for Academics Adopting an Online Peer Review Teaching Model

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Abstract

The growth of information and communication technologies (ICTs) and the emerging needs of higher education students have emphasised the need to incorporate digital developments into learning and teaching activities. ICTs afford innovative and active engagement of the learner, recognise good teaching and promote lifelong learning. On the other hand, there are considerable challenges associated with implementing and integrating ICTs in course environments as academics and institutions struggle to keep abreast of rapidly evolving technologies and pedagogies, thereby wrestling with these emerging technologies and often wrangling to ensure that they support learning and teaching strategies directly and effectively.

This paper reports on the incorporation of a comprehensive peer review system into a course within a Faculty of Business and Law at an Australian university, and the experiences, challenges and issues faced by academics with regard to integrating technologies with teaching, learning and assessment practices and outcomes. The peer review approaches reported in the paper first featured in a postgraduate level course and incorporate a peer review system, a course management system, an electronic assessment management system, electronic discussions and a feedback system, which are provided in conjunction with the traditional mode of teaching. After successfully running the course for two years, the course team won a grant to extend its development. The peer review system was developed and trialled within the faculty, focusing on the blended learning environment across the wide range of disciplines and contexts within the faculty.

The findings showed that the systems were successful at incorporating a combination of formative and summative assessment items. While there were challenges about trust, quality and independence, they were minimised through a structured, peer review approach and moderation process. Participants acknowledged that the blended learning environment was challenging and complex; however, learning and teaching in this environment were effective and efficient. Another challenge in developing such a strategy was the requirement to accommodate a wide range of teaching and assessment practices adopted by a large number of academics. It was concluded that blended learning can be innovative and effective, thereby reaping the rewards of wrestling and wrangling with the associated emergent ICTs, but that it requires careful management on the part of academics and a change in student attitude if the potential rewards of academics

adopting a blended learning peer review teaching model are to be reaped.

Key words: blended learning, online learning, peer assessment, peer review system, peer review teaching

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Introduction

Universities are currently grappling with their students' increasing diversity and mobility, and their need to combine study, family and paid work (Archer, 2007; Greenbank, Hepworth, & Mercer, 2009; Heath, 2007; Lehmann, 2011). Information and communication technologies (ICTs) have for some time now provided a means for addressing these challenges, with blended and online learning environments rapidly gaining currency in the higher education sector (see Bliuc, Ellis, Goodyear, & Piggott, 2010; Nora & Plazas Snyder, 2008–2009; Tao, Ramsey, & Watson, 2011). On the other hand, there are considerable challenges associated with implementing and integrating ICTs into course environments as academics and institutions struggle to keep abreast of rapidly evolving technologies and pedagogies, and there are some salutary reminders that the expectations held of blended and online learning to address this issue can be excessive and unrealistic (see Hannon & D'Netto, 2007; Holley & Oliver, 2010; Kember, McNaught, Chong, Lam, & Cheng, 2010; Oliver & Trigwell, 2005).

Certainly, if the potential benefits of blended and online learning are to be realised for students, academics and administrators alike, it is crucial to wrestle resiliently with the ICTs currently available to universities and in ways that reap rewards with regard to the effective and sustainable integration of ICTs into teaching practice and improved engagement and learning for learners. This paper traces just such a process of wrestling by two of the authors as they grappled with the integration of ICTs into a postgraduate business course in an Australian university to facilitate learning opportunities and outcomes for students as well as efficiency in their consumption of available ICT and human resources.

The paper consists of four sections:

1. The background to the course development and evolution
2. The research design underpinning the study
3. The approach to the integration of ICTs into the curriculum, including the principles, design features and elements underpinning the course development
4. The implications of this approach for academics wrestling and wrangling with, and seeking to reap the benefits of, the integration of ICTs into their curricula

Background

The postgraduate business course that is the focus of this paper was initially offered on-campus in the early 2000s. The course catered to the needs of students studying computing technology but management students were also enrolled; however, in order to address the needs of students who were studying in the distance education mode, major revisions were suggested to the course, which warranted a whole new philosophy. It was decided that a new course would be developed to cater to the needs of students studying on-campus, through distance or in a combination of both modes (blended learning). The course attracted a large enrolment of around 150 students across all offers. On-campus and off-campus students all had access to an online course presence using the university's course management system.

The course was offered to postgraduate information systems students. The course development philosophy centred on the concepts of minimising plagiarism, students assessing other students' work in a legitimate way, students learning on their own (rather than our teaching them), challenging students in terms of their application of study materials, and students articulating the management principles associated with information systems ubiquitously available in organisations. The main thrust was understanding 'enterprise' aspects and their applications rather than memorising textbook materials and repeating the same information in an examination. The course, therefore, was tailored to meet the demands of 'practical' knowledge or 'hands-on' aspects, and required student to think.

The students who were typically enrolled in the course were both young and mature-aged, technologically savvy and not so savvy, domestic and overseas, those who were keen to receive a highly ranked final grade and those who were pleased just to pass the course, and finally those who invested considerable weekly study time and those who studied during examinations and assessments periods only. A major issue that the two of us involved in developing and teaching the course found with such a dispersed, heterogeneous and varyingly skilled cohort of students was the level of uniformity of access to course learning experiences, including course materials and teacher support. Uniformity in this context is defined as the situation in which the level of knowledge and support provided to the student cohort is in practice the same as that provided to any randomly chosen student. Some of the specific issues encountered that presented challenges to such uniformity included:

1. a delay in sending and receiving printed materials
2. lack of library resources in certain overseas countries
3. students not being able to afford to purchase textbooks
4. lack of library infrastructure for postgraduate students to conduct research to complete assessment items (the course enrolment consisted of students from various countries enrolling either directly or through partner agencies and access to library infrastructure was not at a level offered at the main campus, especially in terms of academic journals, access to online databases and Internet connections as licensing agreements did not cover certain partner institutions)
5. lack of qualified tutors as partner agencies employed tutors who may not be well qualified or may not have been inducted into the university's systems and procedures
6. delays in providing timely feedback owing to long turn-around times

7. lack of communication between lecturing teams and student teams owing to varying time zones
8. very tightly packed time schedules
9. preference for rote learning by certain groups of students
10. lack of computing infrastructure among certain student groups.

Another major concern related to the quality of the assessment and feedback experience for students. Despite the fact that all our students could submit assignments electronically, the feedback loop was quite time consuming. Moreover, owing to large student numbers, there was an element of fatigue in terms of marking by certain lecturers. For example, in the faculty there were six semesters in a year and some semesters overlapped with others. Furthermore, when a lecturer was teaching in a particular semester, he or she would still undertake deferred and supplementary examination activities, prepare materials for the next semesters, plan teaching visits and so forth. This introduced a feeling of ‘burnout’ among course teaching team members. In addition, the assignments were marked by many tutoring staff and feedback comments to students varied in quantity and quality, introducing certain levels of confusion among students. So we were interested in facilitating a satisfying assessment and feedback experience for both students and lecturers with regard to providing quick feedback and a level of transparency in awarding marks.

Thus, the two key dilemmas faced by the course team were: “How can we assure uniform levels of access to course learning experiences?” and “How can the course assessment experience sustainably facilitate student learning?”. When we started to address these issues, we quickly learned that many issues were beyond our control and many solutions would involve heavy costs. Furthermore, in certain cases, owing to contractual agreements with partnering institutions in overseas countries, there was little management support for the significant investments required to lift the standards. In addition, some of the solutions that were easy to implement were not cost effective, as the fee in return did not provide a sufficient return on investment. So the two key dilemmas and contextual limitations required the course team to adopt a new way of thinking, especially in relation to integrating ICTs into the course curriculum.

Research design

The study’s research design was underpinned by the principles of a qualitative, evaluative, single case study (see Jones, Edwards, & While, 2011; May, Gay, Atkins, & Marks-Maran, 2008; Reddy & Moores, 2008). The purpose was to use a variety of data sources to assess the teaching model’s effectiveness and to understand the diverse ways in which it was perceived and used by the respective stakeholders in its development and implementation. We assumed that there were likely to be complex and sometimes contradictory constructions of the teaching model, but that it would be possible to elicit specific themes that would be recognisable to a sufficient number and range of stakeholders to warrant their inclusion in our analysis. Data sources included the teaching model’s elements and other course materials, which we examined from the perspective of the effective of integration of ICTs into the selected course curriculum. In addition, we drew on focused discussions within the research team about the educational effectiveness of the teaching model that were framed by our respective experiences and expertise in higher education curriculum design and delivery. Indeed, the widening of the research team to include two members who had no involvement in planning and

teaching the course under review was crucial to ensuring the rigour of the research project and to enhancing the comprehensiveness of our analysis, based on the principle of researchers as insiders and outsiders to the particular community being investigated (Irvine, Roberts, & Bradbury-Jones, 2008). Data analysis entailed the identification of initial themes, followed by their verification through discussion and writing by the research team members, guided by the three organising questions outlined below.

Curriculum design: Principles, design features and elements

The main issue was providing a reasonable level of uniformity, without compromising the quality, yet also providing an enjoyable experience to both students and lecturers. Keeping this in mind, we decided on the following six guiding principles:

1. The entire course should be delivered online to address time delays.
2. A peer review feedback system should be introduced to reduce the work burden on lecturing staff.
3. Students should also be provided with the opportunity to see other students' assignments.
4. A rapid response scheme should be included so that within 48 to 72 hours feedback would be given to students.
5. The entire marking system should be automated as much as possible.
6. Mandatory plagiarism checks should be included.

These principles were exemplified by means of the following three curriculum design features:

1. Online course

In order for the course to be online, the first challenge was to assemble the materials. The entire course was assembled in terms of modules that were independent of one another, but threaded with a common course goal and objectives. This in turn enabled us to provide weekly materials with an overarching principle of what was needed to be learned and how this could be accomplished. With every task of learning, students were guided to a set of reference materials, all provided as .pdf files. This also eliminated the difficulty in buying a textbook encountered by certain groups of students.

2. Peer review system

The peer review consisted of multiple sections that enabled students to submit their work, mark other students' work, submit comments on others' work, dispatch marked assessments automatically, provide moderation when scores were not within a particular range, etc. This system enabled students to accomplish many of the objectives of the course design.

3. Plagiarism check

Students were permitted to submit all assessment items only after checking for plagiarism. This eliminated certain levels of copying and collusion. Furthermore, the plagiarism checking procedure taught students specific ethical values. The course team interacted with university support team members who helped with the preparation of curriculum materials, and enabled an easy to follow plagiarism

application in the course. This requirement was made very clear so that students understood the importance of this aspect.

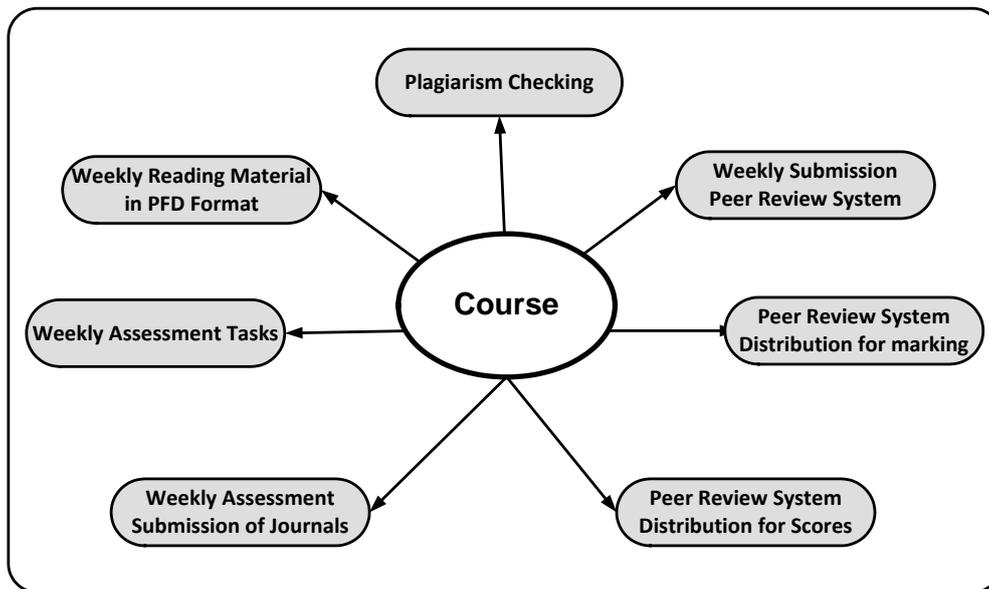


Figure 1: An overview of the elements of the course

As can be seen from Figure 1, the elements of the course consisted of the ‘spokes’ model where the course was developed through a number of independent philosophies. For example, a “Weekly Reading Materials in PDF Format” was developed to address the issues encountered in terms of non-uniform library infrastructures. The problems encountered in access to library journals and online databases was addressed by providing a set of reading materials in pdf form, and this constituted the basic reading materials to impart the weekly knowledge. In addition, a set of Web links was provided to students to augment their knowledge; thus, uniformity of access to materials was assured.

Similarly, a “Weekly Submission Peer Review System” was implemented to address the criticism that students were not able to comprehend the feedback and comments made by markers as a number of markers were involved in the course. The peer review system enabled the distribution of weekly materials to other students in the course with a set of marking guidelines, and students were able to evaluate the quality of weekly journals submitted. The major goal of this component of the course was to ensure that students were able to comprehend weekly materials, address a set of tasks given to them in building their major assessment tasks and present the materials in a form that was understood by their peers. This also enabled other students to assess their own level of work and collective improvement was found in the class after a few weeks. Considerable benefits realised as a result of this approach were: rapid turnaround; a reduced burden on academic staff; and improved overall class performance.

Implications for academics wrestling, wrangling and reaping with educational technologies

The broader implications of the preceding account of selected elements of a single course in a single faculty in a single Australian university are framed by considering in turn three organising questions:

1. What are the interactions and links between the social and the technical dimensions of emerging technologies as educators wrestle to integrate them into higher education curricula?
2. What are the implications for social repression and/or transformation of pedagogies as educators wrangle with emerging technologies to support learning and teaching?
3. What are the rewards for staff, students and technologies that can be reaped through the successful integration of emerging technologies into the curriculum?

Social and technical dimensions of, and wrestling with, emerging technologies

We recognise that some conceptual frameworks, such as actor network theory (Luck, 2008) eschew the artificial distinction between the social and technical aspects of technologies, instead seeing them as analytically indivisible and practically interdependent, while other frameworks highlight the complexity and diversity of interactions that are instantiated and enacted in any teaching enterprise (Rossi, 2010). At the same time, we perceive conceptual value in distinguishing between these elements at least at the level of identifying specific features of the process that impact academics' capacities for integrating emerging technologies into their teaching.

In the case of the course analysed here, there was an ongoing interplay – and in some ways an enduring tension – between the technical and social dimensions of the course's development. For example, the online peer review element of the course was seen as crucial to its effectiveness from the perspectives of students and staff members alike; yet, there needed to be a very close alignment between the technical features (such as facilitating multiple file sharing and the accurate recording of results by different markers of the same individual student text) and the social features (such as students feeling confident about the accuracy and relevance of the feedback provided by their peers and academics being able to identify potentially inappropriate feedback being given by particular peer reviewers and if so being able to remedy the situation promptly and fairly). This situation resonates with the desire to understand how social and technical affordances of specific technologies enable or constrain particular configurations of learning (Lange, 2008), as well as with the view that technologies are neither essentialised nor deterministic but instead exhibit a political character that links them with the wider social system (Feenberg, 2010). This helps to explain why the effective integration of particular emerging technologies into higher education necessitates academics' wrestling with those technologies – there is no automatic or easy closeness of fit or fitness of purpose between the two, and they are often developed to fulfil different imperatives. On the other hand, the course presented here demonstrates that it is feasible to bring those imperatives into a reasonably successful alliance, at least for the course's duration.

Social repression and/or transformation of pedagogies as educators wrangle with emerging technologies to support learning and teaching

We contend that the enthusiastic take-up of the integrated elements of the course outlined in Figure 1 by students and academics alike signified at least to some extent the course's potential for contributing to a transformation of the pedagogies involved in its design, delivery and evaluation. Such a finding is consistent with the

recognition that ICTs can contribute directly and sustainably to enhancing pedagogical practices (Nachmias, Mioduser, & Forkosh-Baruch, 2008), and that they are crucial to creating new and meaningful learning opportunities in online environments (Garrison & Akyol, 2009; Oxman, 2008) rather than merely replicating face-to-face education in a repackaged delivery mode. Similarly the close collaboration among different course team members to initiate and implement those integrated elements resonates with the valuing of key support staff members such as instructional designers in promoting transformative change agency in contemporary universities (Campbell, Schwier, & Kenny, 2007).

At the same time, it is important to acknowledge that academics' and teachers' resistance to ICTs is a major theme in the literature (Blin & Munro, 2008). On the one hand, this resistance might denote a social repression of the technologies' potential to transform existing practices for reasons as varied as educators' lack of confidence in their capacity to use those technologies and their mistrust of the technologies' educational value (Bingimlas, 2009). On the other hand, this resistance could suggest an insightful refusal by experienced academics to be distracted by unproven claims of impact and utility applied to particular technologies (Convery, 2009). Both these positions are consistent with efforts to use ICTs to generate productive educational change being counterbalanced by caution about the rhetorical power of such ICTs and by the complexity and diversity of the learning and teaching environments in which they need to be enacted. Certainly academics must wrangle with these technologies if they are to realise their educational potential.

Rewards for staff, students and technologies that can be reaped through successfully integrating emerging technologies into the curriculum

The previous section of the paper outlined the principles, design features and elements of the course under review. We asserted that, while the course development process was not easy and the positive outcomes were not guaranteed, the outcomes of that process have been largely welcomed by students and staff members, based partly on the formers' anonymous evaluations of the course's effectiveness and the latters' explicit reflections on the progress achieved to date and ideas for future development.

This finding is important for understanding the drivers and facilitators of student and staff engagement with ICT integration in learning and teaching, in a context where much remains unclear about the relevant factors and their relative importance and impact (Lawless & Pellegrino, 2007). For example, "Although emerging technologies offer a vast range of opportunities for promoting collaboration in both synchronous and asynchronous learning environments, distance education programs around the globe face challenges that may limit or deter implementation of these technologies" (Beldarrain, 2006, p. 139). One such challenge is the ambivalence felt by some students towards course management systems being established as virtual learning environments – for instance, embracing them as a delivery model but sometimes being unwilling to participate actively in two-way online interactions (Wells, De Lange, & Fieger, 2008). Another challenge is some students' apparent inability to make the transition with social networking software from personal use to the context of a university course (Cole, 2009). Another challenge is continuing resistance by many academics (Mehra & Mital, 2007). All of this suggests that there are clear rewards recognised and valued by students and staff members that they have reaped through successfully integrating emerging technologies into their curricula, but also that

those rewards are won only through the exercise of sustained effort and against the backdrop of a wide array of countervailing forces.

Overall, the course team and students found the overall experience very satisfying. The course development introduced certain elements of ‘discipline’ among students and staff involved. For example, at the students’ level, they were trained to produce timely, high quality reports, based on weekly reading, assessed by other students. This component itself was found to be a great benefit as late assessment submission requests, appeals, etc., have almost disappeared. In relation to staff, the choice of materials and presenting the material to students in terms of readability and relevance became an important issue, and prompted them to read more widely than the textbook alone. Staff members were also given an opportunity to view the comments made by the students in assessing one another’s texts and provided critical insights as to the expectations of students when marking their submitted work. The course planning was a constant challenge as staff members needed to find technologies that are emerging and resources associated with these emerging technologies, and how these technologies are managed in organisations. This prompted staff to meet industry people, thus expanding their networks beyond traditional academia. Furthermore, staff members realised the benefit of switching their roles from ‘teachers’ to ‘prompters’ as they were prompting students to read widely and to apply their knowledge to a given context. A significant benefit was that of enforcing plagiarism, as students started to apply the plagiarism tool in other courses and now this has become a habit among students. This has culminated in a reduction in plagiarism cases in the faculty. Students also appreciated the ‘marking component’ as they were given the opportunity to read a variety of reports and to appreciate at first hand the potential vagaries that are associated with these different types of reports and presentations.

A major complaint from students was the workload as they were forced to write 500 words of journals every week, 3000 words of report twice each semester and weekly submissions. Recognising this aspect, in subsequent iterations of the course, the number of weekly reports submitted was reduced and a tighter set of marking criteria was developed.

Conclusion

This paper has explored selected aspects of the integration of ICTs into higher education curricula. Specifically, it has focused on how the implementation of a teaching model has encapsulated broader challenges and opportunities for academics seeking to enhance learning and teaching outcomes. Those challenges and opportunities have much of value to say about the forces framing and constraining academics as they wrestle with emergent technologies and they wrangle about the most effective ways of implementing them in ways that are educationally sound and appropriate to the course and program objectives.

In essence, both students and the staff team enjoyed the overall experience. This finding demonstrates the benefits that can be reaped from the kind of blended learning peer review teaching model analysed here, provided that careful management by academics and attitudinal shifts by students are enacted in this type of integration of contemporary technologies into higher education learning and teaching.

More broadly, the paper highlights the complexity and diversity of academic work related to teaching and facilitating learning in online and blended environments,

which are rapidly gaining currency as the preferred delivery model in contemporary Australian universities. The aspirations articulated by the course team members, and the struggles that they exhibited in striving to fulfil those aspirations, resonate with equivalent goals and grappling identified by the other articles in this theme issue. We see the teaching model outlined here, and the accompanying principles, design features and elements of its curriculum design, as potentially useful strategies for reaping substantial benefits from the wrestling and wrangling that helped to produce them.

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