Enhancing student learning utilising web-based technology, peer review feedback and reflective practices: a learning community approach to assessment

Sue Taylor, Mary Ryan and Jon Pearce

School of Accountancy, QUT Business School, Queensland University of Technology, Brisbane, Australia; School of Cultural and Language Studies in Education, Faculty of Education, Queensland University of Technology, Brisbane, Australia; Department of Information Systems, University of Melbourne, Melbourne, Australia

Higher education is becoming a major driver of economic competitiveness in an increasingly knowledge-driven global economy. Maintaining the competitive edge has seen an increase in public accountability of higher education institutions through the mechanism of ranking universities based on the quality of their teaching and learning outcomes. As a result, assessment processes are under scrutiny, creating tensions between standardisation and measurability and the development of creative and reflective learners. These tensions are further highlighted in the context of large undergraduate subjects, learner diversity and time-poor academics and students. Research suggests that high level and complex learning is best developed when assessment, combined with effective feedback practices, involves students as partners in these processes.

This article reports on a four phase, cross-institution and cross-discipline project designed to embed peer review processes as part of the assessment in two large, undergraduate accounting classes. Using a social constructivist view of learning, which emphasises the role of both teacher and learner in the development of complex cognitive understandings, we undertook an iterative process of peer review. Successive phases built upon students’ feedback and achievements and input from language/learning and curriculum experts to improve the teaching and learning outcomes.

Keywords: accounting; assessment; collaboration; peer review; reflective learning; student engagement; web-based learning

1. Introduction and background

Amidst increased calls for public accountability in the higher education sector and the current ranking of universities globally based on the quality of their teaching and learning outcomes (OECD, 2010b), universities have prioritised the need for increased transparency in assessment practices (Ecclestone, 2001; Mansell, James and the Assessment Reform Group, 2009). The standardised systems and corporatised procedures articulated within this accountability agenda have often neglected the quality of student engagement and investment in their own learning, with the result that current assessment practice has been evaluated as seriously deficient (Biggs, 2003; Biggs & Tang, 2007; Race, 2003). Compounding these tensions in the Australian higher education sector are challenges such as: financial
restrictions, increasing student numbers, and the resulting fragmentation of academic programmes across flexible learning options.

Innovative curriculum and assessment design is required to address the realities of the massification and corporatisation of higher education, but at the same time provide learning opportunities that engage and challenge diverse learners. The primary objective of peer assessment is to foster engagement through a peer review process which ‘...helps students help each other plan their learning, identify their strengths and weaknesses, target areas for remedial action, and develop...other personal and professional skills. Peer feedback is available in greater volume and with greater immediacy than [instructor] feedback’ (Topping, 2009, p. 20). In turn, the benefits of web-based technology-based peer review have been well documented with a recent study by Mulder and colleagues identifying a statistically significant improvement between pre- and post- peer reviewed essay grades (Mulder, Baik, Naylor, & Pearce, 2014).

It is important to note however that the current thinking around self- and peer-review assessment highlights the need for explicit training in assessment processes, including how to discern the application of key criteria, how to make judgements, and how to take action according to feedback (O’Donovan, Price, & Rust, 2005; Sadler, 2010). What has been underexplored in the literature around assessment training is the need to broaden these self and peer-review concepts to include a reflective practices stance (Ryan, 2013; Ryan & Ryan, 2012a). That is, in order to achieve high levels of ‘active engagement’ by students, rigorous reflective learning processes need to be an integral part of the peer review process and carefully and explicitly scaffolded for students (Ryan & Ryan, 2012a). While Bain and colleagues (2002) argue that deep reflective skills can be taught, for students to be able to successfully use reflective practices there must be a carefully scaffolded induction process incorporated into the self- and peer-review tasks. These issues will be further elaborated within the context of utilising innovative web-based technology processes in large classes in higher education. This paper argues that more nuanced training in assessment processes is required for students to engage in self- and peer-assessment in higher education. Reflective frameworks offer a powerful, action-oriented approach to assessment training. Our findings show that the use of reflective peer review and response frameworks for training results in higher quality peer reviews and subsequently, improved assessment outcomes for students.

2. Major benefits and limitations of peer review

2.1. Introduction
Prior to discussing the four phases of our peer review journey, it is important to clearly articulate the major benefits and limitations of the peer review process as identified in the research literature.

2.2. Peer review benefit one
Social constructivism highlights the critical importance of the social context of learning, emphasising the role of both teacher and learner in the development of complex cognitive understandings and the generation of new knowledge (Adams, 2006; Vygotsky, 1962). Importantly, consensus between individuals is held to be the ultimate criterion upon which to judge the veracity of knowledge. Peer learning and assessment is one such context that values consensus of quality from members of a community of practice, rather than relying solely on teacher judgment or objective test scores. As highlighted by Lave and Wenger (1991), at the heart of a community of practice is the idea that learning occurs in social contexts that
emerge and evolve when people who have common goals interact to strive towards these objectives. These communities have the potential to both promote innovation and to develop and spread existing tacit knowledge within a group.

At the heart of social constructivism is that both students and tutors should be actively engaged with the assessment process to ensure they truly understand the requirements of the process, and the overall criteria and standards being applied (Brew, Riley, & Walta, 2009; Rust, O’Donovan, & Price, 2005; Willey & Gardner, 2010). In addition the research literature highlights that active engagement by tutors with the assessment process results in improved standardisation outcomes in marking (Saunders & Davis, 1998).

2.3. **Peer review benefit two**

Peer review also has the potential to assist students from culturally and educationally diverse backgrounds in adjusting to university, with peers potentially acting as positive role models within a non-intimidating, informal environment. As highlighted in Ladyshewsky & Gardner (2008, p. 245) ‘communications between peers are less threatening than those that involve supervisors or authorities. Hence, enhanced disclosure, discussion and deeper learning outcomes are possible’. The peer review process has the potential to lead to effective peer learning networks that students can draw on for the duration of their degrees, and potentially beyond (Ladyshewsky & Gardner 2008).

2.4. **Peer review benefit three**

As highlighted by Rust, O’Donovan and Price 2005 and Pearce, Mulder and Baik (2010), the level of the qualitative and quantitative feedback normally available to students involved in a major project is often limited to a final summative grade from time-poor, academic staff. This approach ‘...is ineffective as part of an intended iterative cycle of learning, because there is no further opportunity for students to improve on their assignment. This means there is little motivation for them to reflect on, or learn from this feedback’ (Pearce et. al., 2010, pp. 1–2).

Thus, a third key benefit of the peer review process is its underlying potential to simultaneously reduce the marking loads of staff while creating opportunities for students to become involved in a continuous cycle of evaluating the work of their peers during its formative stages with all the benefits for students identified within the social constructivist literature. Further, Sadler (2010) argues that we need to provide students with substantial evaluative experience not as an extra but as a strategic part of the teaching design. Such evaluative experience should enable them to recognise or judge quality when they see it and also explain their judgements.

2.5. **Statistically significant improvement**

Mulder and colleagues (2014) have also provided statistical evidence that peer review improved the final essay grades of participating students. That is, while the mean pre-review essay mark for the whole cohort participating in the study rated at 62.1%, following the peer review process, student marks indicated a highly statistically significant rise of 4.4 marks to a mean post-review mark of 66.5.

2.6. **Limitations of peer review**

2.6.1. **Staff perspectives and concerns:**

Of concern to academic staff members are two key issues. Firstly, how to design the peer review curriculum in order to address students’ learning and professional development needs and to simultaneously ensure that all students participate in this new approach to assessment.
Second, there are significant time costs of designing, planning and implementing a staff-led, peer review process in large classes particularly if one of the aims is to protect the anonymity of reviewers (Huijser et al., 2008).

2.6.2. Student concerns
Offsetting student benefits are a range of potential impediments to implementing student peer review (Pearce et al., 2010) including: with students rather than staff marking the work, issues of validity, reliability, bias and fairness will arise; students can resent being required to review and comment on other students’ work believing that staff are paid to complete these tasks; and they may lack confidence in their own ability to evaluate their peers’ work. To address these student concerns, Price (2013, pp. 5–15) places a strong focus on the need for training/development of student expertise.

Phase One of this research project will further elaborate these staff concerns in relation to administrative load, while Phases Two, Three and Four will identify the steps taken to address both staff and student identified limitations.

3. Phase One – Semesters One and Two 2010: staff-led, in-class peer review

3.1. Introduction
The origins of this project began with an individual accounting academic with no technology or education-based degrees, facing a range of assessment and curriculum issues as the co-ordinator of a large accounting subject. AYB 200 – Financial Accounting (AYB200) is a second year accounting subject within the Bachelor of Business degree of an Australian university with enrolments of approximately 320 to 380 students per semester. A key concern in AYB200 was that the multiple choice mid-semester exam and the ‘passive’ student role within the tutorials were not aligned with either the practical skills required by employers of accountancy graduates or the needs of students to be active participants in the assessment process. This misalignment significantly contributed to low participation and attendance numbers and the high failure rates within the subject.

A peer-review based assessment task was implemented in AYB200 in Semester One, 2010 as a potential resolution to these issues following both an analysis of the available educational literature and attendance at a 2009 assessment workshop entitled ‘Engaging students with assessment and feedback’, delivered in Australia by Professor Chris Rust from Oxford Brookes University.

Of particular note was the literature-based evidence which highlighted that peer-marking using model answers (Forbes & Spence, 1991; Hughes, 1995) was effective in improving students’ work and in students’ positive perceptions of the value of the activity. Orsmond, Merry and Reiling (1996) reported that not only did students enjoy peer-marking exercises but felt they benefited from them by becoming more critical and working in more structured ways.

3.2. Methodology
3.2.1. Application of social constructivism
As highlighted in Figure 1(a), the particular peer review process adopted in Phase One for AYB200 sought to emphasise the social constructivist view of assessment combining explicit and implicit criteria in the form of: written learning objectives, written solutions; discussions with tutors and the provision of marking exemplars/pro-formas, and weekly in-class
discussions with students related to these solutions and marking schemes prior to the in-class, peer-based, marking process.

3.2.2. Three week continuous cycle
The finally selected, marking-based task was set as a three week, continuous cycle of: lecture content – week one; a tutorial on the lecture material – week two; and, in week three, the in-class, peer-review marking of the assessment task related to the week one lecture content. Prior to the in-class, student-based marking process, the tutors and the students worked through both the solutions for the assessment task and the marking criteria to minimise marking discrepancies and uncertainties.

3.3. Results – student surveys
Three sets of anonymous and voluntary student surveys were used to identify the key benefits of the peer review marking process. For both the pre-exam and post-exam surveys, the content of the surveys was developed by the AYB200 staff in order to obtain specific feedback on the peer review process. The formal, university-wide evaluation process also allowed AYB200 staff an opportunity to raise specific questions which, in this case, were focused on peer review feedback.

As highlighted in Figure 1(b), the first pre-exam survey was conducted in-class in the voluntary, final exam revision lecture with an attendance of approximately 85 students with 25 students volunteering to complete the survey who then wrote 131 comments across the questions. The second pre-exam survey (48 students/129 comments) was the voluntary, university-wide evaluation process (LEX) which was sent to the full cohort of AYB200 students of approximately 340 students. The third survey was conducted post the final exam and was conducted online (31 students/93 comments) as set out in Figure 1 (c).

These weekly, peer-marked assessment tasks resolved key issues experienced in prior semesters of a lack of student engagement. The in-class, tutor-led discussion of the task solutions and marking scheme provided the students with knowledge of the ‘A’ grade answers as highlighted in Figure 1(d). This weekly interaction with the solutions acted as a benchmark for self-assessment by students in completing their own weekly tasks. With the research literature quite clear that feedback is arguably the most important part of the assessment process in its potential to affect future learning and student achievement (Black & Wiliam, 1998; Gibbs & Simpson, 2004-05, this assessment task process considerably improved the quality and usefulness to students of the feedback loop.
Figure 1(a). Phase One *AYB200* – Semesters One and Two, 2010: staff-led, in-class.

<table>
<thead>
<tr>
<th>Out of Class Activity</th>
<th>THREE. Weeks Two to Thirteen – Tutorial Work Preparation Formative</th>
<th>FIVE. Weeks Two to Thirteen – Preparation of Answers to Assessment Questions - SUMMATIVE</th>
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<tbody>
<tr>
<td>In Class Activity – Staff And Students</td>
<td>TWO. Lecture - Twelve Topics</td>
<td>FOUR. Formative Tutorials: Students Held Week after Lecture + Tutorial Solutions Placed</td>
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<td>SIX. In-Class Submission Tutorial Assessment Random Peer Marking</td>
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<td>EIGHT. Three to Thirteen: Staff Return Marked and Reviewed Peer Review Answers to Students in the Weekly Tutorials</td>
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<td>NINE. FINAL REVISION LECTURE – Anonymous and Voluntary Survey</td>
</tr>
<tr>
<td>Staff Only</td>
<td>ONE. Weeks One to Twelve: Lecture Prepared + Assessment Q’s, Solutions and Marking ProFormas</td>
<td>SEVEN. Weeks Three to Thirteen: Staff Review and Record Marked Work and Resolve Any Marking Queries</td>
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<td>PreExInClass</td>
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<td>21</td>
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<tr>
<td>PreExLEX</td>
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<td>14</td>
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<td>10</td>
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Figure 1(b). *AYB200* – Pre-exam in-class student survey and pre-exam university wide student survey.
Figure 1(c). *AYB200* – Post exam, online cohort.

Figure 1(d). *AYB200* Final exam results – pre and post assessment task.
3.4. Discussion

Of concern, however, was that these student-based, positive outcomes required a significant time commitment by the full-time staff to implement the assessment process in class over a ten-week period and to then collect and record the marked tasks, deal with any marking issues, and then the redistribution back to the original ‘owners’. Thus, Phase Two modified the peer review process by replacing the staff administrative load with a web-based framework. This modified peer review process was then to be applied in a second-year accounting subject, *AYB227 – International Accounting* as detailed in Figure 2 (a) below.

4. Phase Two – Semester One, 2011 and Semesters One and Two, 2012

4.1. PRAZE

PRAZE is a sophisticated web-based system that facilitates flexible management of all aspects of peer review (Mulder & Pearce, 2007). It allows staff to set up, customise and manage a peer review process within a subject, so that students can then anonymously review each other’s work and send and receive feedback on their submitted drafts. The PRAZE process, therefore, has many similarities to systems used to assist in managing the reviewing of papers for a journal or conference, but it also has specific requirements unique to the teaching environment.

<table>
<thead>
<tr>
<th>Out of Class Activity</th>
<th>THREE: Weeks Four to Seven - Students Prepare Assignment Draft - FORMATIVE</th>
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<tr>
<td></td>
<td>FOUR: Weeks Seven to Eight – FORMATIVE - Four-Day Submission of Draft - PRAZE</td>
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<td></td>
<td>SIX: Weeks Eight to Nine – SUMMATIVE - Four-Days to Write Peer Reviews RELEASED TO ORIGINAL AUTHORS</td>
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<td>SEVEN: Week Ten – Final Assignment Submitted - SUMMATIVE</td>
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<tr>
<th>In Class Activity – Staff And Students</th>
<th>TWO: Week Four – Lecture - Assessment Task Released</th>
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<td>EIGHT: AN REVISION LECTURE – Anonymous and Voluntary Survey</td>
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<tr>
<th>Staff Only</th>
<th>ONE: Week One - Setting of Assessment Task – Including PRAZE Proforma</th>
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<td>FIVE: Week Eight – PRAZE, Peer Review Allocations</td>
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<td></td>
<td>SEVEN: Week Ten – Staff Marking of Peer Reviews Submitted - 6 Marks Each</td>
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Figure 2(a). Phase Two – Semester One, 2011 and Semesters One and Two, 2012: Web-based technology
4.2. Results

4.2.1. AYB227 – PRAZE Trial, Semester Two, 2011

Within Phase Two, in Week Seven, the students in AYB227 had to upload a draft of their individual project by student number only to the PRAZE website. Utilising the major project’s primary assessment criteria, a step-by-step proforma of review questions set up within the PRAZE system guided the students through their review of the assigned peer task. The students were provided with a four-day submission phase and then a four-day review phase to allow for students who were ill, away on work-related tasks, or who had other assessment deadlines to meet. This entire process was formative.

Of the 126 students in this, off-semester cohort, 102 students submitted their drafts and then 99 students of these 102 students completed their assigned reviews. The submission task was assigned 4% of the overall 12% for weekly task submissions, while the online peer review was assigned 12 marks within the overall project assessment total of 90 marks. This mark was designed to be large enough to reward students for completing a quality, constructive review but small enough to ensure that students continued to work towards improving their final project.

4.2.2. Student results

A voluntary and anonymous survey process was conducted in written form during the final exam revision lecture, with 92 students completing the six-question survey. The overwhelmingly positive responses are set out in Figure 2 (b) and reveal that:

1. In responding to Question One in terms of what they perceived to be the key benefit of the peer review task, the students identified the peer review process as an excellent motivator to start the assignment early (87/92).
2. & 3. In terms of their experiences in using the web-based technology, the student responses to both Questions Two and Three, strongly agreed that both the submission and review procedures were very easy to use (88/92 and 86/92 respectively).
4. In relation to Question Four which sought to determine whether the peer review process assisted the students to more fully understand what was expected of them in order to complete the set task, again there was significant student agreement with this statement (72/92).
5. A significant majority of students also strongly agreed that the quality of the peer review comments received were of great value to them (74/92). For example, the reviews highlighted that: ‘…my initial draft was very brief, off track and that I had selected countries from the wrong cultural groupings. The reviewers saved me by highlighting these issues and provided lots of helpful information on which direction I should take to improve the quality of my work’.
6. In responding to the final question of the survey, a significant proportion of the students believed that the marks awarded for participation in the peer review process were very fair (85/92) and that the peer review process should definitely be retained and, if possible expanded to multiple reviews per student (85/92).
4.3. Discussion

4.3.1. Phase One staff concerns addressed

The adoption of web-based technology to administer and record the peer review process within AYB227 was successful in eliminating the administrative load previously undertaken by tutoring staff within Phase One. The PRAZE system not only ‘supervised’ and monitored both the submission and review allocation processes (for example, by sending helpful reminder emails to students in relation to upcoming deadlines) but also maintained an extremely efficient and detailed record of all activity on the site, including which students submitted, which students then completed one or both reviews and copies of all relevant uploaded documents. These detailed records ensured that the remaining administrative load of awarding marks under the assessment task for the initial submission and then the completion of the peer reviews could be completed quickly by the unit co-ordinator.

Figure 2(b). Phase Two, PRAZE. AYB227.

4.3.2. Additional scaffolding for students

Of concern, however, was the 20% non-participation rate and feedback was also sought through the survey process on this issue. The primary reason for non-participation related to the students believing that they did not have the necessary skills. Phase Three of this project provides details of the resolution of these issues by approaching peer review as a carefully, scaffolded, reflective practice.
5. Phase Three – Semester One, 2013: Reflective practices

5.2. Introduction
As highlighted by Ryan & Ryan (2012a; 2012b), the importance of reflection in higher education and across disciplinary fields is widely recognised and it is generally included in university graduate attributes, professional standards and programme objectives. However, a key issue is that reflection is commonly embedded into assessment requirements in higher education subjects, without the necessary scaffolding or setting out of clear expectations for students. For Phase Three, we adopted the 4Rs framework of reflection as detailed below in Figures 3 (a) (i) and (ii) for both the peer review and peer feedback processes.

![The 4Rs Model of Reflective Thinking](image)

<table>
<thead>
<tr>
<th>Level</th>
<th>Questions to get you started</th>
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<tbody>
<tr>
<td>1. Reporting and Responding</td>
<td>Overall, what are the best aspects of this assignment? Why? What major elements are missing (if any)? Based on your initial reading, what grade would you give this assignment? Use the criteria sheet to explain why.</td>
</tr>
<tr>
<td>2. Relating</td>
<td>Compare this assignment to your own assignment. What is different or similar? Are the differences legitimate or have they got it wrong? Why? Do you understand the assessment task? Have you engaged with the unit materials in enough depth to provide feedback? Do you think the writer of this assignment understood the task? Why? Have you written a peer review before? If so, in what ways could you improve your review this time?</td>
</tr>
<tr>
<td>3. Reasoning</td>
<td>In detail, outline the significant points that need addressing and why. Use your knowledge of the task, the relevant theories and the literature from this unit to provide constructive suggestions that the person can action. Have you considered other viewpoints or alternatives that might be just as legitimate as your suggestions? List any minor points that would improve the assignment, with reasons.</td>
</tr>
<tr>
<td>4. Reconstructing</td>
<td>Have you provided feedback that is specific? Have you provided feedback that gives reasons for your comments? Have you framed your feedback professionally using clear, constructive and supportive language? Have you provided suggestions for future action?</td>
</tr>
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Figure 3(a) (i). Peer Review Process – The 4 Rs Model – Phase Three Step One. Extracted from Bain et. al. (2002) and Ryan & Ryan (2012a).
Ryan and Ryan (2012a) found that the reflective levels were not adequate to guide higher education teachers in embedding reflective practice across different disciplines and program stages. They developed ‘... a new, transferable and customisable model for teaching and assessing reflective learning across higher education, which foregrounds and explains the pedagogic field of higher education as a multidimensional space. Further, they argue that explicit and strategic pedagogic intervention, supported by dynamic resources, is necessary for successful, broad-scale approaches to reflection in higher education’ (Ryan & Ryan 2012a, p. 2).

5.2 Methodology

5.2.1. Step One - The TARL model and the pedagogic field

In order to ensure that the AYB227 students receive the level of support needed to develop appropriate reflective habits, Ryan & Ryan’s teaching and assessing reflective learning (TARL) model, as detailed in Figure 3 (b) below, has been utilised to reformulate the web-based technology based, peer-review task.
To simplify the selection of possible approaches around the teaching of reflection, Ryan & Ryan (2010), introduce the pedagogic field. This field can best be imagined as a two dimensional space where categories (or levels) of reflection are set against the development stages students experience across a course. Figure 3 (b) above highlights the pedagogic field with these dimensions. The dots represent specific teaching episodes or teaching patterns that are relevant for students at a particular stage in their course and that target a specific level (and sometimes a range) of reflection.

With reference to their model, Ryan & Ryan (2012a, p. 6) highlight that the category-based dimension (vertical axis) captures the progression from rudimentary reflective thinking to more sophisticated thinking such as that set out in the 4Rs Model of Reflective Thinking (2010, p. 6). On the other hand, the development-based dimension (horizontal axis) tries to capture the varied demands on teaching as students’ progress through a program/course of study or act within different contexts.

5.2.2. Embedding reflective tasks

In terms of embedding reflective tasks within the AYB227 peer review assessment task for Semester One, 2013, the TARL model highlights that the task is expecting the students, first, to move from a focus on the self as learners to a focus on peers (as per the horizontal axis in the TARL model). In order to achieve this transformation, explicit scaffolding in terms of appropriate reflective practices needs to be provided. Secondly, students need specific assistance in providing in-depth, analytical comments on the work of their peers (as per the vertical axis in the TARL model). Thus, in order to fully engage students in a collaborative, peer review task:
1. Students needed to be provided with explicit support/scaffolding in how to write a review. The major failing within the Phase Two scenario was that there was no reflective process in place, which involved working with students to develop evaluative skills. Such support in Phase Three would include annotating examples of effective and ineffective reviews and scaffolding practice reviews of a sample assignment using reflective prompts that relate to the marking criteria; and

2. Students also needed to be provided with initial support in terms of how to address the feedback received from their peer reviewers. This type of support to be introduced in Phase Three will be aimed at teaching students how to weigh up the feedback received in light of the criteria, and to justify a plan of action.

5.2.3. Step Two – Implementation of the TARL model
Given that the web-based technology had been highly valued and supported by students, this framework was retained, unmodified, for use within the AYB227 subject for 2012 and 2013. In order to ensure the reflective practices workshop was successful in maximising assessment outcomes for all students, two tutorial groups within the Semester Two, 2012 cohort of AYB227 students were surveyed on a voluntary and anonymous basis. In responding to the survey question which asked students to explain how they responded to/dealt with the peer review responses received from two different peer reviewers, significant issues of ‘mistrust’ and ‘conflict’ (15/36 – 42%) were revealed. That is, the students receiving the reviews felt they did not have the skills to process and reflect on the feedback received.

In seeking to resolve these issues 33% (12/36) of students sought advice from other students and staff prior to accepting their reviewer comments. In addition, 28% (10/36) of students felt both ‘confused’ and ‘hesitant’ to move away from their own ideas and found themselves continually ‘justifying their original arguments’ against what they perceived were the ‘attacks’ of the reviewers. This feedback was then utilised in developing the content for the reflective practices workshop as set out in detail in Figure 3 (c) to ensure that it offered a way forward in developing students’ evaluative and transformative learning skills.

5.2.4. Step Three – Semester One, 2013
The AYB227, Semester One, 2013 students were required to attend the reflective practices workshop in the week prior to the commencement of the peer review task. Students attending this workshop and participating in in-class discussions were awarded ten marks from the 120 marks allocated to the major, individual project (a 30% assessment task). A limitation of this marks allocation process was that there was no effective way to differentiate the efforts of the students which resulted in most students being awarded full marks primarily for attendance. This issue was addressed in Phase Four.
5.2.5. Student surveys

In a voluntary and anonymous survey process the response from the students to this support workshop was overwhelmingly successful. That is, 83% (48/58) of the students (writing a peer review) and 90% (55/61) of the students (effectively dealing with feedback) found the level of support provided by the workshop useful to very useful in terms of maximising the benefits of the peer review process as highlighted in Figure 3 (d) below.

Figure 3(c). Phase Three – Semester One, 2013: Mandatory support workshop.

5.2.5. Student surveys

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Figure 3(d). Phase Three – Step Three – AYB227 Peer review student evaluations, Semester One, 2013.
5.3. Discussion
While the students identified increased levels of post-workshop support, we believed that student assessment outcomes could still be improved. Of concern, the non-participation rate was still significant at approximately 15% of enrolled students. In addition, a staff-based analysis of the pre- and post-project results for students in both the 2012 and 2013 cohorts revealed that the final, summative result of non-participants was at least one grade lower than participating students. This issue will be further discussed in the future recommendations section.

These outcomes highlighted that our approach needed to incorporate all of the elements of a social constructivist view of learning, whereby knowledge and skills around peer reflection are co-constructed through explicit modelling, practice and feedback (Willey & Gardner 2010). Thus, a modified version of the reflective practices support workshop was designed for Phase Four of the project as set out in Figure 4 (a) with hands-on practice sessions included.

6. Phase Four – Semester Two, 2013 and Semester One, 2014 – Revised reflective practices workshop

6.1. Introduction and methodology
Under the revised framework, the ten marks (out of the total 120 marks assigned to the project) was based on students both attending the workshop and submitting their drafts to their small groups within the workshop time. With 97% of the AYB227 students in attendance, and following an initial expert-led presentation on how to write a constructive peer review and how to effectively process the peer feedback received, the workshop class was divided into small groups to practise peer review writing and processing feedback tasks set out in Figure 4 (a) below.

As highlighted in Fig 4 (b), this modified support workshop resulted in improved student ratings with 89% of students (33/37) reporting that the workshop supported them in writing peer review at the high to very high level. In addition, 93% of the respondents (32/35) reported that the workshop supported them in utilising peer and staff feedback also at high to very high levels. Non-participation rates also fell to approximately 11% of enrolled students.
### 6.2. Final discussions

This project has demonstrated that the benefits of peer review as identified in the research literature can be achieved for higher education staff and students simultaneously if an appropriate methodology is adopted. We found that an iterative approach was useful for reflecting upon our goal to improve assessment practices and outcomes for both staff and students. While the key objective of the constantly evolving, peer review process was to guide students toward life-long learning, accounting educators have also developed new skills...
as mediators and moderators in the process of assisting students to take ownership of their own learning within a user-friendly, web-based learning environment.

The movement from the Phase One, time-intensive, staff-led, in-class framework to a web-based system in Phase Two delivered an extremely efficient, effective and easily mastered (by both staff and students) peer-review process which significantly reduced the time commitment for staff. The addition of explicit instruction in reflective strategies for peer review included in Phases Three and Four, resulted in significantly improved student ratings for the peer review process and a reduction in non-participation rates.

7. Conclusions, limitations and future recommendations
In conclusion, this four-phase project provides evidence that innovative assessment design does have the capacity to provide some measure of relief from the internal and external tensions currently faced by higher education staff and students. Of most importance is that these findings ‘…arguably demonstrate that inviting students into the assessment process can mean that assessment broadens out from merely the assessment of learning to become an effective learning tool in its own right, facilitating assessment for learning’ (O’Donovan, Price, & Rust, (2004, p. 330). One of our key learnings, however, is that students need carefully scaffolded support to achieve the levels of reflective review that will lead to improved practice through independent self-management.

A limitation of the data gathering process conducted, however, is that it has relied significantly on self-reporting by students. An analysis of the differences between pre- and post-peer review outcomes is planned for Semester One, 2015 utilising the expertise of external, independent markers. The second phase of this 2015 project will involve a detailed analysis of the non-participation issue over the five semesters of the web-based, peer review process in order to develop more effective, scaffolded support.

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