Engaging students in reflective practice through a process of formative peer review and peer assessment

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The benefits of engaging students in reflective practice through a process of peer learning and peer assessment are said to include increased awareness of the quality of their work, increased self reflection on their learning and on their performance as peer evaluators, improved student learning outcomes and the development of life long learning skills. Despite these potential benefits, several studies have reported unfavourable student attitudes to peer assessment, including student fears about the effects of rivalries and competition, a lack of confidence about their qualifications to carry out the work, doubts about their ability to be objective and lack of training for the task. The literature also reports various strategies that can be adopted to address these concerns, such as the provision of training for students and tutors in self, peer and collaborative assessment, and ensuring students understand the benefits to be gained from participation in the assessment process. This paper explores the potential of these alternative assessment models by drawing on the experience of the authors who have employed collaborative formative peer review and peer assessment in their undergraduate media arts courses over the last three years. The benefits for students and teachers engaged in a process of reflective practice are reported as well as the challenges in moving from formative review to a peer assessment approach. In the concluding section of the paper, the authors discuss suggested strategies aimed at addressing the identified challenges and facilitating student engagement in the peer assessment process.

Keywords: peer review, peer assessment, reflective practice

Introduction
There is increasing interest in alternative assessment practices designed to engage students as active participants in the assessment process and to equip them with the skills required to analyse information, problem-solve, work in teams, communicate effectively and reflect critically on their professional practice (Dochy & McDowell, 1998; Sluijsmans, Dochy, & Moerkerke, 1998; Humphreys, Greenan, & McIlveen, 1997). Such interest has been fuelled by growing awareness of the limitations of traditional approaches to assessment (Boud & Falchikov, 2006 & 2005; Falchikov, 2004; Sluijsmans, Dochy, & Moerkerke, 1998) and in response to the need for more flexible learning environments, the search for more cost and time effective assessment techniques and better utilisation of new technological possibilities for assessment (James, McInnis & Devlin, 2002).

This paper begins with an overview of the potential benefits of alternative approaches to assessment as well as the limitations reported in the literature. In the next section of the paper, case studies based on the implementation of formative peer review and peer assessment in two undergraduate courses offered in the Media Arts program at the University of South Australia are presented. The findings from course evaluations are reported and the benefits as

well as challenges in moving from a formative peer review process to peer assessment are then discussed. In the concluding section, the authors suggest strategies for addressing the documented challenges in order to maximise the benefits of peer learning and assessment in the undergraduate curriculum and discuss the value of engaging academics themselves in reflective practice facilitated through their participation in peer review.

Alternative Assessment

The problems with traditional approaches to assessment are well documented (Boud & Falchikov, 2006 & 2005; Falchikov, 2004; Sluijsmans, Dochy & Moerkerke, 1998). Based on an extensive review of the literature, Falchikov (2004) reported that traditional assessment is more likely to produce passive learners and reduce motivation, tends to be associated with surface approaches to learning.. Sluijsmans, Dochy and Moerkerke (1998) have also suggested that traditional assessment of student achievement as a summative activity carried out at the end of a process of learning is losing momentum, and they identified several alternative approaches to assessment including: (i) self-assessment; (ii) peer assessment and peer evaluation; (iii) self and peer-assessment and (iv) self and peer-assessment related to co-assessment.

Peer assessment can be used in both a formative and summative approach and complements self-assessment, and both approaches can be used together requiring students to assess their peers and their own progress or performance as a means of self-reflection. Hanrahan and Isaacs (2001) have argued that both self and peer-assessment skills are needed for students to develop life long learning skills since self-assessment helps students to set goals, while peer assessment can help them to contribute constructively in collaborative efforts. The fifth approach identified by Sluijsmans, Dochy and Moerkerke (1998), and Dochy and McDowell (1998), co-assessment (also known as collaborative or cooperative assessment) involves the participation of both teacher and students in the assessment process.

Benefits of alternative assessment approaches

The benefits of alternative assessment, particularly peer-assessment are also widely reported (Falchikov, 2003, 2004; Davies, 2003; Langan & Wheater, 2003;Sluijsmans, Dochy, & Moerkerke, 1998). These benefits are said to include:

- development of students' evaluative and critical abilities McDowell (cited in Sluijsmans, Dochy, & Moerkerke, 1998);
- increased opportunities to learn from the mistakes of peers as well as from exemplary work of others (Langan & Wheater, 2003; Race, 1998 cited in Ballantyne, Hughes, & Mylonas, 2002)
- more integrated knowledge and a better understanding of standards required (Hanrahan & Isaacs, 2001)
- increased confidence (Langan and Wheater, 2003; Topping et al, 2000)
- greater awareness of the dilemmas facing tutors in assessing student work (Hanrahan & Isaacs, 2001) and
- development of the learner's ability to self-evaluate and reflect (Langan & Wheater, 2003).

Limitations of alternative approaches

Falchikov (2004) has documented several studies reporting unfavourable student attitudes to peer assessment, including a study by Olver & Omari (cited in Falchikov, 2004) which found that students were less than positive about peer assessment because of their fears about the effects of rivalries and competition. Cheng and Warren (1997) in a study of Hong Kong

students reported that while students were in the main positive about the experience, 60% who originally responded favourably to the question relating to their confidence in assigning grades responsibly changed their mind in post-measurement testing. The reasons given for this shift towards a negative direction included lack of confidence about their qualifications to carry out the work; doubts about their ability to be objective and also about the objectivity of their peers, a feeling that there was too much responsibility placed on the shoulders of the student, and lack of training for the task.

Formative peer review

Another approach to peer assessment reported in the literature involves peers in a process of peer assessment or peer review prior to final submission of assignments, thereby providing students with the opportunity to act on the feedback. Falchikov (1996) reported the benefits experienced by students participating in a formative feedback approach, including making the criteria explicit to students, providing them with the opportunity to participate in a non-evaluative feedback session, reviewing the work of their peers and reflecting on their approach to the assignment. One of the advantages of this approach is that students who feel less confident about their ability to assign grades fairly can provide qualitative feedback without the associated concerns regarding competition or rivalry. This approach is also more likely to be acceptable to teachers who are resistant to relinquishing responsibility for final marking of student work, and can provide students and teachers with a non-threatening opportunity to benefit from the collaborative peer review process.

In this next section, case studies describing the implementation of a non-evaluative formative peer review process in a first year undergraduate media arts course and a peer assessment approach in a final year media arts course are reported, and the benefits reported by students as well as the limitations discussed.

Case Studies: Implementation of alternative approaches to assessment

The formative peer review process described in the preceding section has been trialled in three undergraduate media arts courses at the University of South Australia over a three year period. Since the findings from all three courses have been consistent and reported elsewhere (see Wood and Freney, 2007), only one of the courses, a first year undergraduate media arts course, is described in this paper. The second case study described in this paper, a third year media arts course, provides a contrasting approach involving peer assessment. The findings from student evaluations of the alternative assessment approaches implemented in these two courses are reported in the following sections.

Digital Media Techniques (INFT 1014)

Students undertaking specialisations within the Media Arts program are required to complete *Digital Media* Techniques *(INFT 1014)*, which is a first year undergraduate course introducing students to the creative design principles, processes, skills and media production techniques required for use within and across a variety of digital media artefacts and interactive digital media forms.

Peer review process

Students are invited to post their work in progress ideas as well as each of their three assignments to a peer review forum prior to final marking. Students who choose to participate in this peer review process are required to review at least one other student's work, and they are encouraged to review as many student assignments as possible. The course coordinator also participates in the peer review process and students are free to engage in online

discussions with their reviewer and other students to clarify or challenge any comments received. The feedback provided by students and coordinator is qualitative; no marks are allocated during the peer review process. Students are given one week from the time they receive peer review feedback to make any changes they wish prior to final marking of their assignments by their tutors. Tutors monitor the discussion forum throughout the peer review process and use this to assist in the moderation process.

Course evaluation

A summary of students' mean ratings (on a scale of -100 to +100) in response to course evaluation questions relating to student satisfaction with feedback, relevance of the assessment to graduate qualities and teacher interest are reported in Table 1 below. While peer review was an option for students undertaking the course in the first semester of 2005 (2005-02), the course evaluation was completed by students prior to the peer review process. As Table 1 shows, students rated the value of the feedback provided, the relevance of the assessment tasks and the commitment of the teacher much lower in that offering than in subsequent offerings of the course when students completed the evaluation after participating in the peer review process.

Table 1: Digital Media Techniques (INFT 1014) course evaluations 2005-2008

Criteria	2005-02*	2005-05	2006-02	2006-05	2007-02	2007-05	2008-02
Response rate	70/33.3%	8/14.0%	58/28.3%	11/16.4%	46/24.2%	19/35.3%	36/24.3%
Feedback received was constructive & helpful	31.43	75	72.41	54.55	52.17	57.89	59.72
Assessment tasks were related to Grad Qual	40.58	56.25	62.07	54.55	53.33	47.37	52.78
Teachers showed interest in teaching	44.29	87.5	76.72	68.18	71.74	76.32	63.89

* UniSA semesters are referred to as study periods. Study period 2 is the same as semester 1 and study period 5 refers to semester 2. So 2005-02 means semester 1 offering in 2005 and 2005-05 means semester 2 offering of that course

Figure 1 shows student ratings in response to three additional custom questions addressing the peer review process, which were incorporated into the course evaluation at the end of the semester 1 (study period 2), 2008 offering of *Digital Media Techniques*. As Figure 1 shows, students generally rated the value of the peer review process in helping them to better reflect on their own work, and to also improve on the quality of their assignments much higher than they rated their skill in the ability to critique the work of others, with 53 (45%) students strongly agreeing and 25 (22%) agreeing that the peer review process helped them to better reflect on their own work and 47 (40%) students strongly agreeing and 36 (30%) agreeing that they were able to improve on the quality of the work as result of the peer review process. However, as Figure 1 also shows, fewer agreed that the process helped develop their ability to critique the work of others with 28 (22%) strongly agreeing and 33 (26%) agreeing, 25 students (20%) neutral and the 14 (11%) remaining students either disagreeing (8/7%) or strongly disagreeing (6/4%) in response to this statement.
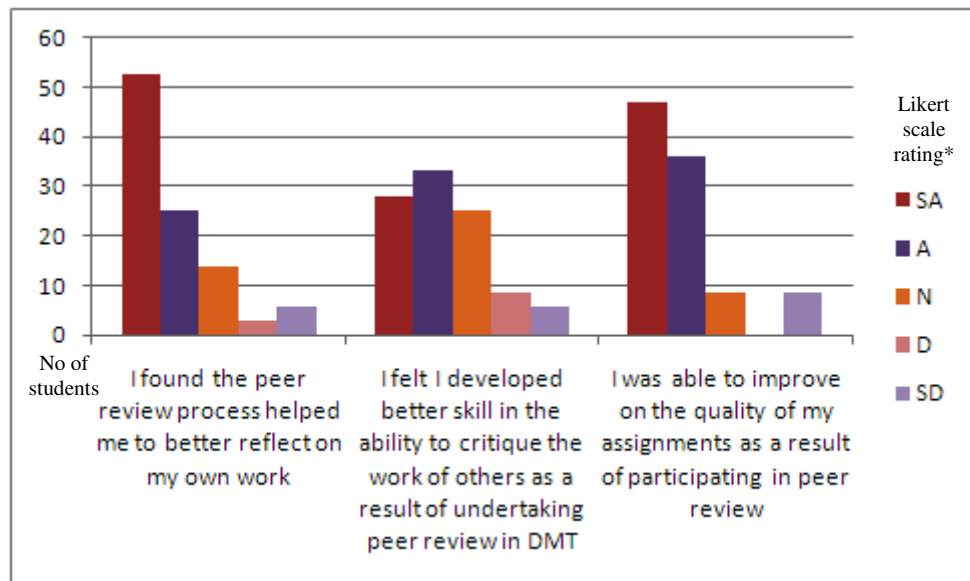
Likert-scale rating: SA (strongly agree); A (agree); N (neutral); D (disagree); SD (strongly disagree)

Figure 1: Student responses to peer review process in 2008 offering of Digital Media Techniques (INFT 1014)

Students' qualitative comments in the course evaluation further suggest a generally positive attitude to the peer review process. Students commented on:

- the benefits of being able to review their peers' assignments and to reflect on their own work
- the value in comparing their work against the assignments of other students and to improve on their work prior to final marking and
- the communication process which facilitated collaboration among peers

Creating Interactive Media (INFT 2001)

The aim of Creating Interactive Media is for students to develop the knowledge, experience and skills for the creation of effective multimedia pieces through an authentic group project. Students critically analyse and participate in the creation of interactive multimedia publications.

Peer assessment process

Students work in groups on each assessment task but apply individual skills within that framework and so the course coordinator chose to trial a peer assessment approach in the first semester of 2008 to provide a more equitable means of assessing individual commitment, participation and contribution to the group based assignments. Using this approach the course coordinator provided an overall grade for the group effort in each assignment and individual students received a portion of that group mark on the basis of the marks allocated through the peer assessment process. While the coordinator undertook the summative assessment of group productions, he did not participate in the peer assessment process and there was no peer review component enabling students to improve on the quality of their work on the basis of formative review of the first two assignments – though feedback from each assignment was designed to support students and provide them with the required guidance to improve on the quality of subsequent assignments in the course.

Course evaluation

While the coordinator reported evidence suggesting most students found the assessment fair and matching the structure of the course, Table 2, which reports students' mean ratings (on a scale of -100 to +100) in response to course evaluation questions at the end of the semester 1 (study period 2) offerings of the course in 2007 and 2008, indicates a reduction in student satisfaction with the feedback they received (reduction from a mean of 47.2 in 2007 to 12.5 in 2008), the relevance of the assessment to graduate qualities (47.22 in 2007 and 25 in 2008) and teacher interest (55.56 in 2007 compared with 12.5 in 2008). Since the same teaching staff were involved in both of these offerings, albeit with a smaller group in 2008 and the potential of a skewed result, it is reasonable to assume that the assessment process could have negatively impacted on student evaluations.

**Table 2: Creating Interactive Media (INFT 2001)
course evaluations 2005-2008**

Criteria	2007-02*	2008-02*
Feedback received was constructive & helpful	47.22	12.5
Assessment tasks were related to Graduate Qualities	47.22	25.0
Teachers showed interest in teaching	55.56	12.5

** Study period 2 is the same as semester 1 and study period 5 refers to semester 2.
2007-02 means semester 1 offering in 2007 and 2008-02 means semester 1 2008 offering*

Discussion

The findings of the trials of peer review and peer assessment reported in this paper demonstrate the benefits to be gained from students participating in peer review of each other's assignments prior to final marking of their work. Despite the small sample size of the 2008 (INFT 2001) dataset which may have adversely skewed the results, it is suggestive of some potential problems associated with the implementation of peer assessment; nevertheless, the methodology pursued provides a structure for future investigation.

Students participating in the peer review process in *Digital Media Techniques* have been consistently positive over the last three years about the benefits in both their ability to reflect on their own work and on their ability to improve on the quality of their work as a result of the peer review process.

The contrasting findings from the first attempt at incorporating peer assessment in the *Creating Interactive Media* course suggests, as Falchikov (2003) noted, that the first implementation of peer assessment is likely to result in a degree of student resistance. The strategies proposed by Falchikov (2004) for addressing these kinds of identified problems include providing training for students and tutors in self, peer and collaborative assessment; ensuring students understand the benefits to be gained from participation in the assessment process; careful planning and involving students in discussion about potential problems before they arise. One way in which these proposed strategies could be effectively integrated in future offerings of the course, is through the introduction of a combination of peer review and peer assessment for each assignment, thereby enabling students to first practice peer assessment in a non-evaluative and constructive manner and also providing them with the

opportunity to improve on their assignments prior to final marking by coordinator and their peers. Such an approach is consistent with Boyer (1990) and Schon's (1983) notion of a 'learning community', which emphasises the central role that peers play in providing structured opportunities for discussion and reflection.

Conclusion

The case studies presented in this paper suggest that non-evaluative peer review provides students with a less-threatening introduction to critical review of their work by peers and also provides them with the constructive feedback required to improve on their work. Given the opportunity to improve their work and the chance to review and critique others' work, students are better able to integrate new knowledge and implement it successfully in subsequent revisions. When a summative assessment is finally made, students are more accepting of the outcome due to their better understanding of the standards required and because they have had the opportunity to improve their work. The findings also suggest students value teachers participating in the peer review process. While the term 'learning community' is normally applied to a community of academic staff, the approach described in this paper suggests that students play an integral role together with the teacher as the expert reviewer. Such an extended 'learning community' ensures that students are an integral part of the feedback process rather than being passive recipients. This develops a higher level of cooperation between all members of the 'learning community'. It is argued that students are more likely to reflect upon and implement advice arising from this communal feedback process and accept their peers' evaluative assessment through a combined approach involving both peer review and peer assessment.

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