



Is peer assessment of asynchronous group discussions fostering skills relevant to our future graduates?

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The increasing use of peer assessment in higher education institutions, as well as its benefits in terms of students' learning is well documented. Distance education can be fraught with challenges, but creating a community of practice has been proven to increase student engagement and learning. This paper reports on the implementation of peer assessment of online asynchronous group discussions to foster a community of practice and equip future graduates with lifelong skills relevant to their chosen professional path. Through a careful preparation of students, the implementation of the peer assessment process proved beneficial. This paper describes the analysis performed to establish the validity and reliability of the peer assessment process in the context of a 3rd year unit of study of the bachelor of nursing at Charles Darwin University.

Keywords: peer assessment, asynchronous communication, distance education, assessment tools

Background

Charles Darwin University (CDU) is a regional, dual sector university. CDU provides over 85% of the higher education and vocational education and training in the Northern Territory of Australia. In the higher education sector, courses are delivered on-campus, external distance only mode or external and internal modes. The nursing and education courses represent the biggest cohorts in the higher education sector of the university and 73% of the students in those cohorts are enrolled as external mode only students.

CDU has rapidly altered its higher education mode of delivery from mostly internal mode to around 70% online external mode, with 43 % of the students studying part-time. This rapid move to online external delivery poses challenges for both staff and students as well as changing the current teaching and learning culture of the institution (Philip & Wozniak, 2009). Research suggests that dropout rates are higher in distance education courses compared to traditional programmes (Carr, 2000). Contributing factors to attrition in distance courses can be competing students' demands such as care of children, changing work situations or student feelings of isolation (Rovai, 2002), which can impact negatively on levels of student satisfaction (Arbaugh, 2000). If a sense of belonging to a community is promulgated within a course however, students' satisfaction and commitment has been shown to increase (Rovai, 2002).

The bachelor of nursing (BN) at CDU can be studied on an external distance mode with only 15 days of on campus attendance over a three year period required. This mode of delivery affords student flexibility and is reflected in the demographics of current students, with more than 80% of the students enrolled being over 25 years old, with the largest student cohort based in Victoria. It is essential that students' learning tasks completed during the course take account these students' competing life demands and overcome potential feelings of isolation. Garrison & Vaughan (2008) described higher levels of perceived learning in communities, and also cited the advantages that distance courses offer; with network supported and facilitated communities being accessible anywhere and at anytime. Furthermore, developing a community of practice within the BN, would not only have an impact on knowledge creation and sharing (Chikh & Berkani, 2010), but could also improve student's satisfaction.

Anecdotal evidence, quantitative and qualitative data from the 2009 CDU course experience questionnaire (MyCEQ) showed that, currently, the BN at CDU lacks opportunities to foster a community of learning amongst the students (Learning Community Scale item mean score 3.13 n=308).

External students believing that they actually belong to a university community. This does not exist... (Comment from student enrolled in the BN)

Consequentially a review of the learning activities and assessment strategies in a 10 credit point third year elective unit was undertaken, in order to ascertain if introducing peer-assessment in an online group discussion activity would enable an increase in students' engagement and foster a sense of community towards solving problem based learning tasks. This paper explores the context of the assessment strategy change, how this change supports learning, evaluates the peer assessment strategy and discusses the limitations uncovered whilst using BlackboardLearn to implement peer-assessed asynchronous online group discussions.

Rationale and challenges of the assessment redesign

The unit of study where the change in assessment was introduced is a third year elective unit addressing emergency nursing practice. This unit aims to equip students with the specialised theoretical knowledge needed to undertake a clinical placement in acute hospital and remote settings and develop a set of skills and graduate attributes such as critical appraisal skills as well as team work, knowledge base, creativity, application and communication skills. The asynchronous group discussion tasks are authentic tasks designed around a scenario. Each scenario is introduced with a video or other trigger materials, which prompts further discussion about key issues and approaches to the problem. The skills developed in the tasks should be closely related to CDU graduate attributes outlined above.

Student feedback on the unit assessment, as well as global feedback on the unit, was collected before any changes were implemented. Comments received from an anonymous discussion board requesting feedback on the unit and analysis of the student experience of learning and teaching (SELT) questionnaires administered at the end of semester two 2009, highlighted that the unit assessment strategy was balanced but the role of the group discussions was unclear. Some students felt that the purpose of the assessment was to write a really short piece of work, post it and wait for a mark (mini-essay). Other students complained that there was little interaction between students and that there was no debate relating to the content of the postings. In addition quantitative data showed that assessed discussion boards attracted an average of 1.4 postings per students. Whilst the low average posts per students proved beneficial for the lecturer in terms of marking workload, it did not prove satisfactory in terms of student engagement in the task, team work, and fostering a community of learning.

In order to increase the student-to-student interaction, whilst keeping the marking load reasonable, a decision to introduce peer assessment of the discussion board postings was made prior to the commencement of semester 1 2010.

Why use peer assessment in online asynchronous discussions?

Asynchronous communication in distance education has the advantage of creating a community of learners at a distance via the use of computer mediated communication (Garrison, Anderson, & Archer, 2003). Although advocates of synchronous communication argue that it provides a high level of

socialisation and supports feedback between teachers and students, asynchronous communication gives an opportunity for a more reflective participation and removes temporal barriers (Garrison et al., 2003). The claims of increased opportunities for interaction between learners and the permanent access to these interactions stem from the social constructivist principles (Hammond, 2005). In a review of papers on online discussions, Hammond (2005) described three major arguments used to support the claim that asynchronous online discussions supported learning. Asynchronous online discussions were found to provide opportunities for interaction despite the distance between learners, have a high rate of participation and evidence of learner presence and afforded a social support that in turn increase the motivation to study. Online discussions have also been shown to increase professional learning (van Weert & Pilot, 2003). Professional preparation is essential in a nursing curriculum and group work through group discussions can allow knowledge acquisition as well as help with developing teamwork skills (Elliott & Higgins, 2005).

Peer assessment is widespread in higher education (Bloxham & Boyd, 2007) and has been demonstrated to promote learning (Falchikov & Goldfinch, 2000). In a program mostly external like the BN at CDU, peer assessment could increase online collaborative working skills essential for an autonomous practitioner (Bryan, 2006). Other benefits described in the literature were a greater sense of accountability, motivation and responsibility (Falchikov, 2005). Students using peer assessment also displayed an increased understanding of the subject matter and an increased understanding of their own achievement in the topic, therefore displaying a deep rather than a surface learning (Bloxham & Boyd, 2007).

Issues around reliability and validity of peer assessment are often cited as arguments against its use. Falchikov and Goldfinch (2000), in a meta-analysis comparing peer and teacher marks, found good level of agreement between staff and students when students are working with clear criteria. Furthermore, Falchikov (2005) emphasises the role of students' preparation to ensure good agreement between marks awarded by teachers and students. It appeared evident from reviewing the literature on peer assessment that the benefits students would gain from this assessment strategy far outweighed the potential disadvantages.

The practical aspects of online peer assessment of asynchronous discussions will now be described as well as a comparison between peer assessment and teacher assessment of the same activities, before describing some limitations experienced.

Practical aspects of peer assessing online group discussions in a learning management system

During semester 1, 2010 the emergency nursing unit where peer assessment was used, had an enrolment of 93 and was offered by external and internal modes. All the students were expected to complete three discussions over the semester using the group discussion board function facility of the learning management system used at CDU: BlackboardLearn. Students were randomly assigned to 11 groups comprising of 8 or 9 students each. In week 3, 7 and 10 students were given the scenario/trigger materials to discuss within their group. In the first week they constructed a 250-word initial post addressing the problem detailed in the scenario. During the second week students were also asked to respond to at least two posts submitted by other students in their group and summarise their groups' ideas. In the third week the discussion board was closed and students assessed each posting against a rubric made available at the beginning of the semester. The rubric outlined different levels of quality for discussions and engagement between students on a scale 0 to 5 encompassing criteria such as originality of postings, scholarly argument, type of interactions between students and demonstration of critical thinking skills. The star rating facility in Blackboard allows for each post in a thread to receive an anonymous star rating, students being unable to allocate themselves a rating. Students were asked to rate each posting in the thread basing their decision on the descriptors in the rubric. The ratings were then used to allocate marks, with a direct correlation between the number of stars awarded and the mark received for the activity. Marks were then collated and averaged to allocate students their final mark for the each discussion out of 5. Marks were only peer allocated; although it was made clear to the students that moderation would take place if needed and marks could be changed as a result of the moderation process. This, however, did not prove necessary. The figure below displays the star rating facility in BlackboardLearn.



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Figure 1: Star rating tool in BlackboardLearn™

Comparison between peer and lecturer allocated marks

Data for the three discussions of semester two 2009 and the three discussions of semester one 2010 of the same unit were collected and analysed. The topics, weeks in the semester the discussions took place, and rubric used to assess the discussions were the same. An independent samples *t* test was used to compare the total marks for 2009 (lecturer assessed; $n = 78$) and the total marks for 2010 (peer assessed; $n = 94$). The *t* test was statistically significant with the 2009 lecturer assessed marks ($M = 10.63$, $SD = 2.06$) being 1.48 points higher (95% CI = ± 0.56 points) than the 2010 peer assessed marks ($M = 9.15$, $SD = 1.68$), $t(170) = 5.18$, $p < .001$, two-tailed, $d = 0.81$.

In order to determine whether the academic level of each student cohort was different, marks obtained for the online tests (MCQ) were also collected and analysed. An independent samples *t* test was used to compare the total marks for the MCQ in 2009 ($n = 77$) and the MCQ in 2010 ($n = 93$). The *t* test was not statistically significant, $t(168) = -0.209$, $p = 0.835$, two-tailed, $d = 0.003$ indicating that the cohorts had similar levels of ability.

The average number of postings per students per discussions was also collected for both semesters. The average number of postings per students in 2009 was 1.4 per students per discussions, whilst being 3.6 in 2010, clearly showing an increase in engagement.

Discussion

Whilst the literature on peer assessment shows that students who have participated in peer assessment display an increase confidence and develop lifelong skills by developing critical and independent thinking skills (Falchikov, 2007), it has also been argued that there are issues of validity and reliability when students are required to allocate marks to their peers, Falchikov and Goldfinch (2000) argue, that teachers themselves found marking problematic and fraught with biases. In this evaluation of the marks given by the students, it was found that students allocated lower marks than the lecturer would have. One explanation for the lower marks seen across the two years could have been that the level of the students was lower in 2010 than in 2009. Analysis of the same MCQs taken by both cohorts showed that there was no significant difference between the marks obtained in 2009 and 2010, therefore showing that the two groups appeared to be of a similar level of knowledge.

Another possible explanation for the difference between the two groups could stem from the tool used to conduct the peer assessment. When using the star rating tool in Blackboard to rate postings in discussion boards, it is impossible to allocate part marks. Although the rubric appeared to be detailed enough, the impossibility of allocating parts of marks might have skewed the marks towards the lower option. A stringency/leniency effect could also have had an influence although it should have been minimised by making each student in the group mark all the other members of the group (Magin, 2001). Collecting informal students' evaluations also corroborated the hypothesis that lower marks seen could be due to a scale effect.

Feedback obtained from the students on the use of peer assessment showed that the exercise was mostly well perceived with students describing the exercise as useful. They saw the exercise as a good preparation for professional practice where peer assessment skills will be required.

At first I was a bit nervous to have stars next to my name! But I did get used to it and we are all in the same boat. Critical review is going to be an important part of our career too. (Comment from a student BN, S1 2010)

Some students stated that assessing their peers allowed them to develop their critical thinking skills further. Some students, however, expressed concerns as to whether they perceived that they had enough expertise to be able to judge their peers fairly, this was also described by Falchikov and Goldfinch (2000). Slightly better marks seen in the third discussion might be a reflection of an increase in students' confidence in peer assessment. Although the use of peer assessment is sometimes seen as a way for the lecturer to lessen the marking workload (Falchikov and Goldfinch 2000), it was not experienced in this context.

Conclusion

Peer assessment has been shown to be a useful tool, not only to allow students to develop lifelong skills that will accompany them during their professional careers as graduates, but also for their academic progression at university. Issues of validity and reliability are important to consider when adopting peer assessment. The results of this exploration of the difference between marks achieved in 2009 and marks achieved in 2010 surprisingly showed that for a similar academic level in the cohort, students performed less well when assessed by their peers. Two explanations for this were considered, and it is likely that the lowest marks were due to the limitations seen in the star rating system used by the learning management system (LMS). Preliminary qualitative data showed that combining peer assessment and asynchronous group discussions, enabled the consolidation of a learning community, and allowed students to take advantage of all the benefits of this community. Peer assessment in this context, will not only allow students studying remotely to be part of a community of learners but would also encourage the achievement of some of the CDU graduate attributes.

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