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Making Teamwork Equitable with Online Technology: A Case Study

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Abstract: In many higher education institutions, teamwork is considered an essential part of the syllabus in helping to promote deep and meaningful learning as well as professional skills such as communication, collaboration and leadership skills. However, in many cases students are unhappy with teamwork activities, as they consider the distribution of marks to be unfair. In many cases, team members are all allocated the same mark regardless of the amount of effort or quality of work contributed by each individual. This case study attempts to resolve these issues by presenting a self and peer assessment strategy (supported with online technology) to help redistribute marks within the team, based on individual performance and contributions.

Introduction

There is a growing emphasis in higher education institutions that students should be developing content knowledge as well as professional skills that can be directly applied in industry such as teamwork skills, problem solving skills, decision-making skills, communication skills and information literacy skills (Australian National Training Authority, 1998; Bennett, Dunne, & Carre, 1999; Candy, Crebert, & O'Leary, 1994; Dearing, 1997). Contemporary educational theory indicates that using self-regulation and self/peer assessment strategies in the learning settings are important elements needed to develop these skills (Biggs, 1999; Boekaerts, 1997; Jonassen, 1996; Loughram, 1996). These strategies in conjunction with online asynchronous communication tools can provide ideal settings to help promote learning as well as professional skill development.

Self and peer assessment are alternative forms of assessment that involve individuals deciding what value their own, and each of their colleagues has contributed to a process or project. How can this form of assessment be integrated into the regular curriculum? In Australia, there are legal issues involved in allowing students determine the final mark of other students. It is important that the tutor makes all the decisions about assessment.

This case study presents a strategy that integrates teamwork with self/peer assessment strategies supported with an online application designed to help tutors make better decisions about transferring marks between team members. A review of the literature is firstly conducted to supported the design of learning environment, which uses online contracts, online self and peer assessment journals, reflective reports and tutor led peer assessment sessions to transfer marks amongst individual team members. Student feedback and comments are then considered in an attempt to evaluate the effectiveness of the learning environment.

Self and Peer Assessment

Peer assessment involves individuals deciding on what value each of their colleagues has contributed to a process or project. Topping (1998) describes peer assessment as: "an arrangement in which individuals consider the amount, level, value, worth, quality, or successfulness of the products or outcomes of learning of others of similar status" (p. 249). This view is also supported by Falchikov (1995) who defines peer assessment as a process were individuals rate their peers by agreeing on appropriate assessment criteria and then accurately apply the assessment.

A review of the literature on self and peer assessment indicates that in order to promote the development of these skills, the environment should be designed to encourage participants to: Have a clear understanding of the objectives (Orsmond, Merry, & Reiling, 1996; Stefani, 1994); Identify valid assessment criteria (Falchikov, 1995; Ford, 1997; Klenowski, 1995; Sluijsmans, Dochy, & Moerkerke, 1999; Sullivan & Hall, 1997; Topping, Smith, & Swanson, 2000); and Accurately and objectively judge success or failure (Oldfield & MacAlpine, 1995; Woolhouse, 1999).

Self-assessment refers to people being involved in making judgements about their own learning and progress, which contributes to the development of autonomous, responsible and reflective individuals (Sambell, McDowell, & Brown, 1998; Schon, 1987). This is also supported by Boud (1992), who has expressed the defining characteristics of self-assessment as: *“The involvement of students in identifying standards and/or criteria to apply to their work and making judgements about the extent to which they have met these criteria.”* (p. 5)

Both self and peer assessment can be used to help inform the design of the learning environment in an attempt to help make teamwork more equitable.

Design of the Learning Environment

The development of project management skills that are transferable to authentic world contexts means that learners have to assume more responsibility for their own learning, but may need assistance through scaffolding and modelling. Team-based project work was chosen in this unit for its relevance and congruence to the learning outcomes that were sought. Project work is advocated for its capacity to support professional expertise and vocational skills and has been successful as an instructional strategy in many contexts (Collis, 1998; Klemm & Snell, 1996; English & Yazdani, 1999).

Activities were designed so that student teams were required to share the workload, undertake separate tasks and maintain tight deadlines and schedules from one week to the next. These activities were designed to be authentic, self-regulated and reflective in nature, and demanded students to consider requirements of others, be adaptive, responsible and flexible.

A group of final year students enrolled in the Interactive Multimedia course at Edith Cowan University was used to test the environment. These students were required to develop skills and expertise in managing the design and development of web sites for industry clients. The unit IMM 3228 – “Project Management Methodologies” uses teams of four students to build web sites for clients that are kept on universities servers for students to use as CV items. Team roles include programmers, graphic designers and project managers. There were 82 students completing this unit, which was delivered through a custom built web site to enable both internal and external students access to resources, and also to enhance the quality of the learning environment. Students negotiate a project topic with their tutor, which is aimed at meeting industry needs.

However, within this context, students often complain about assessment. Some work harder than others, yet usually the whole team is given the same mark. Many students finish the unit feeling unsatisfied with the result, and weary of teamwork, and the assessment methods used to distribute marks. To help solve this type of assessment inequity from occurring in team situations the following strategies were implemented.

The aim was to have students experience project management issues that occur when dealing with real clients in real projects, and also to carefully reflect on their own, and others contributions while engaged in these authentic activities. Self and peer assessment strategies were implemented through the use of online weekly journals. These were designed to assist students and tutors re-distribute marks if team members didn't contribute to team responsibilities in a satisfactory manner. It was intended that the design of the learning environment would encourage students to proactively reflect on their own and their peers' contributions. The following outlines the strategy used to help make the teamwork more equitable. It includes the use of student contracts, self and peer assessment journals, and tutor led peer assessment sessions. These are each discussed below.

Student Contracts

To help gain commitment, students were required to complete on-line contracts at the beginning of the semester, signed by themselves, their team members', and the tutor. The contracts outlined each students' responsibilities for developing the teams' project and weekly tasks.

Self and Peer Assessment Journals

The self and peer assessment journals allowed students to fill out weekly online templates to assess their own performance as well as their peers. Students were required to firstly fill out the self-assessment journal, before being able to perform peer assessment. They were required to consider how effective they had been within the team in completing their own tasks, and discuss reasons for non-performance and any pending or important issues that may affect their team performance. Students would rate their success in completing allocated tasks according to three scales: success, quality, and time taken. This information was available to peers to help them draw conclusions about peer performance.

After students had considered their own progress, they would then assess the performance of peers. This was confidential to the tutors only, so students could discuss peer performance in an honest and open fashion without fear of being compromised or embarrassed. Peer assessment was based on the following four criteria:

- Was he/she regularly at group meetings and punctual?
- Did he/she contribute ideas, suggestions, volunteer services, cooperate and generally motivate team spirit?
- Did he/she complete the assigned tasks for the past week to the best of their ability?
- To what quality did he/she carry out the tasks assigned for the last week?

After grading each of their peers, students could give comments and reasons as to why they allocated the assessment. This was an important part of the peer assessment strategy, as tutors would need to have good reasons for negative assessments that would be considered in tutor led peer assessment sessions.

Tutor Led Peer Assessment Sessions

The above activities provided summary reports for the tutor through the online application. This information helped the tutor make decisions about transferring marks between students, based on self-assessment, peer-assessment and their own observations. At these meetings students were *not* required to openly voice their opinions about peers. The opinions and scores allocated by students were confidential, so only the tutor would know how students had rated their peers, as explained in the syllabus:

“In Tutor Led Peer Assessment Sessions, tutors use confidential information gained from the online student peer assessment journals. Tutors verbally summarises the feelings of the team, without stating who allocated specific marks or comments. For example, if the team consensus formed from the on-line journals is that Carol has been working harder than Bill, then the tutor targets Bill in the meeting, and asks for a defence to the allegations. If Bill cannot support his defence, the amount of marks are negotiated and transferred. For example, Carol may be given 5 extra marks and 5 marks are taken from Bill for her extra work (and his lack of work) over the past 3-4 weeks”.
(Excerpt from IMM 3228 unit syllabus)

If the tutor perceived that marks needed to be transferred between students, they would “target” the student with the collected evidence and openly ask that student to defend the allegations, with a proposition that a certain amount of marks should be transferred to balance team effort against allocated marks. At this point, no other students in the team are required to voice their opinions. Only the “target” student is required to defend their position. Based on their response, marks are negotiated and the tutor makes recommendations as to how the team should progress in the future.

Conclusions

The design of the learning environment encouraged students to reflect on their own and their peers' contributions to the team tasks, carefully considering the assessment criteria, and then using their judgement to assign appropriate marks and comments. This information was confidential, and only the tutor would have access to peer assessments, which allowed students to pass judgements without fear of feeling guilty, or compromising friendships with their peers. They would then receive feedback through the tutor, who would be present a consolidated viewpoint, and multiple perspectives of how each team member was performing. This helped validate student viewpoints about the team, and how each team member was contributing. This strategy allowed the tutor to negotiate and moderate marks between team members based on their contributions to the final product, which avoided the situation in which all team members were given the same mark, even though some worked harder than others.

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