A QUESTION OF BALANCE: USING SELF AND PEER ASSESSMENT EFFECTIVELY IN TEAMWORK

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Abstract
There is a growing emphasis that students should develop professional skills in the course of their education. These include team skills, problem solving skills, decision-making skills, communication skills, information literacy skills, time management skills and many others. To develop such skills, tertiary learners have to engage in tasks that are likely to help students reflect on their own success in completing tasks, and that of their peers. In the literature on learning and self-regulation, self and peer assessment are important strategies used to help develop these skills as well as helping to promote skill transfer to the workplace. On-line learning environments utilising asynchronous communication tools are ideal settings to promote the development and refinement of these professional skills. This case study profiles an on-line approach to developing professional project management skills for multimedia developers using self and peer assessment strategies to motivate student participation.

Introduction

This case study presents an argument in favour of introducing self and peer assessment as an essential characteristic of the students' learning experience in higher education. It also demonstrates how technology can be used to support a culture of self and peer assessment in an on-line environment. The learning environment was designed in response to student needs and the current social and economic debates in Australia about the quality of undergraduate education and of the qualities that university graduates should possess.

During the last ten years there has been a major reappraisal of higher education, its purpose, outcomes and strategies. There is now a more pronounced emphasis on the transition from higher education to the workplace, and on development of graduate skills or competencies that can be transferred from a university setting to the real world (Candy, Crebert & O'Leary, 1994; Assister, 1995). In this changing environment, it can be argued that self and peer assessment strategies when implemented through on-line support, can support the development of a range of transferable skills. This study profiles an on-line approach to collaborative learning and illustrates how a range of self and peer assessment strategies can be used to achieve learning outcomes.

Self and Peer Assessment

Self-assessment refers to people being involved in making judgments about their own learning and progress that 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 judgments about the extent to which they have met these criteria." (p.5). Peer assessment is an alternative form of assessment that 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 reflective, critical and evaluative skills, the learning environment should be designed to encourage participants to:

- Have a clear understanding of the objectives (Orsmond, Merry, & Reiling, 1996);
- Identify valid assessment criteria (Falchikov, 1995; Ford, 1997; Sluijsmans, Dochy, & Moerkerke, 1999; Sullivan & Hall, 1997; Topping, Smith, & Swanson, 2000); and
- Accurately and objectively evaluate success or failure on a given task (Oldfield & MacAlpine, 1995; Woolhouse, 1999).

These strategies were considered in the design of the online learning environment for this case study, as described in the following sections.

Context of the study

Final year students enrolled in the Interactive Multimedia course at Edith Cowan University are required to develop skills and expertise in managing the design and development of client web sites. The unit IMM 3228/4228 – "Project Management Methodologies", uses teams of four or five students to utilize their specialist skills to build an electronic portfolio. 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. Requirements include:

- significant contribution and participation to the development of a team-based project;
- a critical analysis of the project management of a team-based multimedia project;
- formative evaluation of the multimedia product; and
- an analysis of the intended implementation methodologies for that product; and, where relevant, a prediction of the organizational and cultural changes likely to result from the implementation of that product.

The aim was to have students experience project management issues that occur when dealing with real clients in authentic projects.

Task Design
The development of project management skills that are transferable to real world contexts means that learners must assume more responsibility for their own learning, but may need assistance through scaffolding and modeling. 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 has successful as an instructional strategy in many contexts (Collis, 1998; English & Yazdani, 1999). Activities were designed so that student teams were able to share the workload, undertake separate tasks and maintain tight deadlines and schedules from one week to the next. Such activities demanded students to consider requirements of others, be adaptive, responsible and

flexible. As shown in Figure 1, the design of the learning environment included a range of authentic, self-regulated and reflective activities that were integrated into the learning activities.
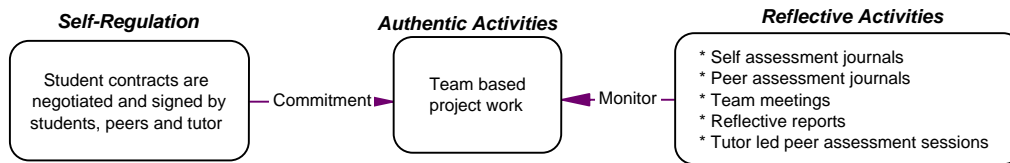

Figure 1: The design of the learning environment

However, within these types of learning environments, students often complain about being unfairly assessed. 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. To help avoid this assessment inequity the following strategies were implemented:

- Student contracts - 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-assessment journals – all students maintained on-line reflective journals in which personal views of their progress were recorded. This was available for their peers and tutor to view. Students considered their success in completing assigned tasks (scale from 1 to 5), the quality achieved (scale from 1 to 5), how successful they had been in managing their time (scale from –2 to +2), and comments justifying their scores;
- Peer assessment journals - students assessed the work of their peers, based on the agreed tasks for that week. Students confidentially rated their peers on four criteria - team meeting attendance, collaboration, success in completing required tasks and the quality of tasks delivered (Figure 3). Tutors then used this information to help make decisions about scores in "tutor led peer assessment sessions";

Figure 3: On-line journal for weekly peer assessments

- Team meetings - students were required to individually discuss their progress, and give reasons for success or non-success at weekly team meetings. This provided a forum for students to discuss their perceptions of progress and obtain direct feedback from the peers;
- Reflective reports - students were required to complete three reflective reports over the semester, where they discussed their strong points, weak points and tactics used to try and make self improvements;

These activities provided confidential information to the tutor through the on-line system, which consolidated information into summary reports. This helped tutors make decisions about evaluating students, based on self assessment, peer assessment and their own observations. Students were not required to openly voice their opinions about peers and their opinions and scores allocated to others were confidential, so only the tutor would know how students had rated their peers. If a tutor perceived that performance scores needed be s/he would approach the student with the collected evidence and openly ask that student to account for his/her contribution to individual and team work. Based on the 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 judgment to assign appropriate marks and comments. Through this combination of peer and self-assessment, students receive feedback from peers and the tutor, and multiple perspectives on how each team member was performing in the team. Overall, the balance of feedback provided to students enabled them to accurately assess their own and others' performances. These self-appraisal and evaluation skills are useful skills for project managers, and well received by employers in the industry.

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