

Can blogs promote fair and equitable teamwork?

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Abstract

Online collaboration tools can provide an opportunity to enhance community building while at the same time motivate students to actively participate in their learning. In this investigation an online learning environment was designed with the aim of promoting clear and transparent communication between higher education students to enable fair and equitable teamwork. The environment was designed with a combination of authentic project work, self-regulated tasks and reflective activity through the use of Bloggers. An evaluation of the learning environment was conducted through both qualitative and quantitative survey instruments.

Introduction

Pedagogies adopted at university sometimes operate within a “transmissive paradigm”, emphasising the transfer of knowledge from teacher to student. This approach is not conducive to experiential, active learning where students take a pro-active role in questioning, sharing ideas and applying prior knowledge to develop new ideas. More recently however, the increased emphasis on generic transferable skills has required a reframing and rethinking of teaching practices to obtain desired learning outcomes (Biggs, 1999).

In the investigation reported here, 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. However, within this team-based context, students often complain about unfair 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. The aim of this study was to help solve this problem, as well as making the unit a valuable learning experience.

A review of the literature is firstly conducted to support the design of learning environment, which uses a combination of student contracts, self assessment, reflective reports and tutor led peer assessment sessions to help make the teamwork rewarding, as well as being fair and equitable. It was also hoped that the learning environment would enable students to develop social, collaborative, professional and communicative skills, as well as actively engaging them in learning.

Context of study

At Edith Cowan University, final year multimedia students are required to complete IMM3330/4330 “Industry Project Development”. The aim of this unit is to consolidate core multimedia skills developed in other units, while at the same time making industry contacts and developing a portfolio item to assist with job applications. Team roles include programmers, graphic designers and project managers. There were 22 students (in teams of four students) undertaking 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. A career management component (worth 20% of the assessment) is also included that requires students to develop a potential employer list, CV and complete selection criteria for jobs that suit their skills.

Students are responsible for making contact with the client and discussing the scope and legal aspects of the project (educational software, IP, etc). These are negotiated so that clients’ requirements are satisfied, while at the same time the students produce authentic assessment items that conform to the requirements of the unit. This involves firstly understanding the client’s needs and “educating” the client about web production, maintenance and costs. The project-based nature of this unit enables students to develop a relationship with a client, create solutions to design problems and develop a project brief, as in a real scenario. In addition, project teams have to report on progress to other teams, compare project plans and reflect on learning processes, assessment processes and team dynamics. Each of these involves partnerships with industry clients and result in the development of websites (<http://studentprojects.scam.ecu.edu.au/>).

The teamwork component in this unit comprises of 70% of the overall assessment. To ensure quality teaching and learning, it was vital to make sure that this teamwork component was seen to be fair, equitable and tasks performed were clearly defined and transparent to all students as team members.

Enhancing online collaboration

An important element of this study considers how to use online communication, in particular weblogs, to increase the benefits of peer work and interdependence by designing a learning environment that enables students to develop social, collaborative, professional and communicative skills as well as actively engage in meaningful peer-to-peer communication and team-based dialogue. The strengths of communication channels to support peer learning flow from the argument that synergies available through group work create multiple perspectives on learning and problem solving (McLoughlin & Luca, 2002b). There is a growing body of research on group work in higher education with an emphasis on participative and peer learning, with the realisation that students are more likely to learn from collaborative learning experiences mediated by technology than from transmissive pedagogies (Johnson & Johnson, 1996). There has also been an increased awareness of the importance of catering for the needs of diverse range of students by providing varied student-centered experiences supported by information and communications technologies (Collis & Moonen, 2001; McLoughlin, 2001). The benefits of computer-supported collaborative learning are well documented in the literature for learners at all levels and contexts (Johnson & Johnson, 1996). For example, Slavin (1996) has demonstrated that collaborative learning has positive effects on motivation, social skills and attitudes. Research indicates that the benefits of collaborative learning can be transferred to the electronic environment, resulting in increased motivation and learning gains. McConnell (2000) provides examples of groupware and computer supported collaborative learning systems to support communication, document sharing and asynchronous conferencing systems supported by courseware management systems. These studies point to the challenge of appreciating the nature and form of communication channels and how they affect the student learning experience.

Weblogs, or blogs began as personal writing spaces that were regularly updated and contained links of interest to the author. While the initial purpose was seen to be a record of the writer's journey, the purpose of which was to store and record information, and to "share and save" observations, the reflective power of blogs has been recognised, as they provide a personal facility to records thoughts and conduct personal research (Wikipedia, 2004; Perseus, 2003). Weblogs are an additional tool now being used to facilitate online learning, as they allow learners to develop, publish and organise knowledge in their own space. In addition, weblogs can promote sharing of ideas and collaboration.

In this study, the rationale for using weblogs was because of their capacity to support collaboration online, a feature recognised by researchers as essential to constructivist web-based environments that enable learning (Oliver & McLoughlin, 2001). By enabling online groups to work on complex tasks in a problem-based learning format, opportunities are provided to develop independent and interdependent skills such as teamwork and communication (McLoughlin & Luca, 2001; McAteer et al., 1997). The features offered by Weblogging enable learners to articulate and share their views, and can effectively facilitate the formation of an online community.

Designing the learning environment

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).

An emphasis on process-oriented approaches was adopted, rather than subject content was adopted as a means of helping student to develop generic communication skills (Biggs, 1999; Candy, Crebert, & O'Leary, 1994; Gibbs, 1992; Ramsden, 1992). The researchers designed a learning environment with a focus on learner-centred activities and socially engaging tasks, rather than trying to create "excellent" lecture notes. This approach is in contrast to traditional didactic methods of teaching in higher education institutions, which emphasise subject specific content and the transfer of knowledge from lecturer to student, which must often be memorised for examination purposes (McLoughlin & Luca, 2002a).

Through a broad review of the literature, it was found that the three elements of self-regulation, reflection and authenticity are the central tenets of instructional design needed to create learning environment that can develop students' generic communicative and team skills (Luca & Oliver, 2003). These strategies provide a framework for developing suitable learning activities that in turn determine the required learning resources and supports needed for an effective learning environment. On the basis of this framework, learning tasks were designed with a focus on self-regulation, authenticity and reflection (Table 1). After these were established, learning supports and resources were then considered.

Table 1: Designing the online learning environment

	Learning tasks	Learning supports	Learning resources
Authentic	<p>Tasks that are contextual, meaningful, ill-defined, involving collaborative effort and are perceived as having real world relevance outside the academic setting:</p> <ul style="list-style-type: none"> Developing a multimedia product based on solving the needs of a "real" client. Final product hosted on university server as a CV item. 	<p>Support for students to build expertise and knowledge through authentic activities, eg:</p> <ul style="list-style-type: none"> Variety of project briefs, presentations and information helping to describe client needs. Tutor advice on time needed for each task and responsibilities. 	<p>A variety of authentic resources to provide a range of perspectives, eg:</p> <ul style="list-style-type: none"> Online samples of past student projects. Metrics used in industry for estimating time. Server space for hosting projects and storing documentation.
Self-directed	<ul style="list-style-type: none"> Selecting projects to match skills and interest. Selecting other team members. Negotiating contracts for project topic, team members, role, duties and time. Determining career opportunities. 	<ul style="list-style-type: none"> Tutor modelling and scaffolding Library support Online support 	<ul style="list-style-type: none"> A range of job selection criteria and online job advertisement for multimedia developers. Online resources — slides, templates, videos and URLs. Book and readers.
Reflective	<p>Tasks that encourage reflection and provide feedback:</p> <ul style="list-style-type: none"> Weekly Blogger entries for self and peer assessment. Reflective reports. 	<ul style="list-style-type: none"> Tutor led peer assessment sessions. Online communication, feedback and discussion with tutor and peers. 	<p>Online Bloggers for students to view their own and peers' attitudes of progress.</p>

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).
- Accurately and objectively judge success or failure (Oldfield & MacAlpine, 1995; Woolhouse, 1999).

In this unit, it was hoped that students would experience authentic project management by dealing with real clients in real projects, and also from these experiences reflect on their own, and others contributions. It was hoped that the design of the learning environment would encourage students to proactively reflect on their own and their peers' contributions, with a view of promoting fair and equitable teamwork. The following outlines the strategy used to help make the teamwork more equitable.

Team contract

To help gain commitment, students were required to complete online contracts at the beginning of the semester, signed by themselves, their team members', and the tutor. The contracts outlined each student's major responsibilities within the team (see Table 2), and how many marks would be allocated for performing the task at a satisfactory level. Students were advised as follows:

It is important that you select a team that has complementary skills and personality types, and are prepared to commit the same amount of effort as you. Students are required to estimate their contribution to each assessment item. With a team of four students you need to multiply each assessment item by 4 in column "Multiply Factor". By doing this each student will need to negotiate their assessment and accrue 70 marks for their team effort. If there are 5 students in the team, then the multiplier will be 5, and so on.

Table 2: Team contract

Assessment items	%	X	Student 1				Student 2 etc.			
			EM	EQ	AM	AQ	EM	EQ	AM	AQ
Project proposal	10									
Design specifications	5									
Rapid prototype	5									
PM Doc 1	5									
Application development	20									
Presentation & online CV	5									
Evaluation report	5									
Metrics report	5									
Post mortem	5									
PM Doc 2	5									
Total	70									
Signatures										

(EM = Estimated mark; EQ = Estimated quality; AM = Actual mark; AQ = Actual quality)

Blogger design

An online Blogger was designed which enabled students to provide weekly progress and reflection of their contributions to the assigned team tasks in an open and transparent fashion. The key aims of the Blogger application was to allow both peers and tutor to view this dialogue in order to clearly see each other's progress and help understand issues and circumstances affecting progress. Each week, students were required to make two key entries:

- reflections on how successful they have been in completed last week's tasks, and
- tasks to be completed in the coming week as part of their responsibilities to the team (see Table 3).

These contributions were worth 10%, one mark per entry and were allocated individually. Full marks were awarded for weekly entries of 100–200 words, which reflected an accurate account of planning/tracking history as well as reflective comments that helped the rest of the team and tutor understand the issues surrounding their tasks and progress. The purpose of using Bloggers was to help students clearly outline their tasks as agreed to with their team in weekly meetings and also their progress. By providing this information in an open and transparent fashion to both peers and tutors, students were able to communicate their progress and discuss any issues that arose.

Negotiating and transferring marks

The Blogger provides information for the tutor to help make decisions about transferring marks between students. At weekly meetings, in which the tutor discusses the how the team is progressing; the Blogger provides information for the whole team to clearly understand the progress of each participant.

In tutor led peers assessment sessions, tutors use information gained from Bloggers, discussions and confidential student emails to help inform peer assessment negotiations. When assignments are returned to the team, tutors summarise how they see progress and use the contract and collected information to negotiate the transfer of marks. For example, Carol may be given 5 extra marks and 5 marks are taken from Bill, as it becomes evident that Carol has done extra work and Bill has not completed tasks, as agreed to in the contract (see Table 2). In fact, the contract is proving to be a powerful tool in clearly identifying tasks for team members, and then transferring marks to others if the work is not completed.

Table 3: Planning and scheduling Blogger

Categories	Description	Sample
Reflections on tasks completed from last week	<ul style="list-style-type: none"> Were the required tasks completed on time, and to the required quality? If not, why not? Teamwork and collaboration issues? Have you given help or received help from others? Team attendance? Contribution at meetings? Other issues that affected progress or teamwork? 	<p>Reflections on tasks completed for Week 5:</p> <ul style="list-style-type: none"> I managed to successfully complete all my tasks for last week with the estimated time except for one major problem!!! The project proposal wasn't finished on time due to technical problems! The meeting I had with Francis didn't go as planned (30 minutes to complete) because we were unable to print the damn proposal. The word document corrupted, and we had to resort to a backup copy, which wasn't current and I had to go home to find!! In the end it took me about 3.5 hours to update the backup copy of the proposal which included formatting. The main problem with this is that it took me an extra day and then caused me to hand it over 1 day late. I felt that this problem wasn't entirely my fault as the team was involved in prepared this document, and we need better backup procedures for the future ☺ <p>Total actual time for Week 5 = 7 hours — 3 hours more than estimated</p>
Tasks to be completed for the coming week	<ul style="list-style-type: none"> Tasks & estimated time to complete? Any foreseeable issues or problems? 	<p>Estimated Tasks and Time Needed for Week 6:</p> <ul style="list-style-type: none"> Create the asset table (est. 1 hour) Collate, modify and print GANTT chart for project diary (est. 15 mins) Modify and print timesheets in Excel for project diary (est. 1 hour) Finalise the roles and responsibilities section for the PM Doc 1 with team members (est. 30 mins) Write up meeting notes and organize agenda for next meeting (est. 30 mins) <p>Total estimated time for Week 6 = 3 hours & 15 mins</p>

Evaluating the learning environment

As an initial step to exploring the value of the Bloggers and the learning design, students were asked to complete a five point Likert scale questionnaire that examined their perceptions about using the Blogger. Table 4 shows their responses (in percentages). The average in the final is calculated by multiplying the strongly disagree responses by -2, disagree responses by -1, neutral responses by 0, agree responses by 1 and strongly agree responses by 2.

Table 4: Blogger perceptions (%)

	Question	SD	D	N	A	SA	Avg
1	I enjoyed using the Blogger in this unit.	7	23	30	23	17	20
2	I found the Blogger useful to reflect on my progress.	7	15	15	46	17	51
3	The Blogger helped promote discussion about progress and required tasks with my peers.	15	30	15	15	25	5
4	The Blogger helped alert me to problems that others were having in my team.	7	23	30	30	10	13
5	The Blogger complements tracking and scheduling tasks as it keeps all the team members informed about progress.	7	15	7	53	18	60
6	Using the Blogger assisted with my learning.	7	30	38	7	18	-1
7	Using the Blogger helped promote fair and equitable teamwork.	15	38	23	15	9	-35
8	The Blogger helped me keep on track with my tasks.	15	23	15	30	17	11
9	I would like to see the Blogger used like this in other units with a teamwork component.	23	15	23	23	16	-6
10	Using the Blogger helped the team develop a better product.	15	16	38	24	7	-8

From the results based on the Likert scale, it was clear that most students strongly agreed that the Blogger was very useful in helping them reflect on their progress within the team, and complemented tracking and scheduling of their tasks to help keep all their team members informed about their progress. This attitude was also reflected on in student responses gained from open questionnaires asking: “What advantages do you think there are in using a Blogger for this unit?”

- Keeps track of yourself and your team — makes it easier to check progress and whether team members are performing their tasks.
- It’s a way of tracking tasks and keeping up to date with progress within the team.
- I can make plans for the weeks, and try my best to do those plans.
- It can be used in lieu of timesheets and helps in reflecting on what was done correctly and incorrectly.
- Planning and seeing where other team members were at in the project and what they were thinking.
- It helps organise what you need to do for that week and the importance of what you need to do.
- I strongly feel that the blogger helps in the way I can reflect of what I have done and what I have to plan for the next task.
- The blogger allowed our group to electronically submit our hours contributed to the project and allowed us to see what the other group members had and were completing at that period of time.
- Keeping up to date with other members’ progress.

However, they perceived that the Blogger wasn’t useful in promoting fair and equitable teamwork (Likert scale average of –35)? This was an interesting response, as all the tutors believed that it strongly contributed to promoting fair and equitable teamwork by providing information that showed how tasks were being performed in an open and transparent fashion. This helped the team and tutor to judge how effectively peers were performing their tasks. Perhaps students didn’t make this connection when answering this question, and the questionnaire needs to be modified to more clearly define “fair and equitable” teamwork. When asked how the Blogger could be improved some suggestions put forward by students included:

- A good and clear introduction on how to write a blogger should be given at the beginning of the semester. Maybe having a structure to follow (more than just about ‘1 reflection and 1 planning’ sections each time).
- Showing feedback from the tutors would help us to know individually how we are going in the team and in the course.
- Make it more like a forum, for example ... week 10 plan ... and each team member can put their entries under that week 10 plan heading. At least this will make team members to read what other has put in.
- Guided areas — so it isn’t just a big text box to fill in. It should be in a heading/answer kind of setting where the user doesn’t have to think so much about what to write and formatting. Does this make sense? I don’t know how to describe it in words
- Have a section for general blogging comments, and a page so you can enter in your timesheet data in separate fields (exactly like the provided timesheet template in the unit outline). The PHP script then could construct a graph so you could see when and how often you have exceeded set times and qualities. This would also help to make it clearer what exactly is expected with the Blogger (as there was a problem with this earlier on in the unit).
- Being able to add, edit and delete in the entries.
- Maybe have it like an online chatroom as well as a schedule keeper? That way people can discuss what should be done when without the ‘added pressure’ of the tutors.

The questionnaire was followed with an interview session with four volunteer students (from different groups) with a view of expanding on how the Blogger application could be improved. As reflected in the questionnaire, the consensus was that the Blogger was a useful application for planning and tracking tasks. However, they found the application ineffective in its capacity to compare with others in the team. Each week they had to open four different entries within their team, and then remember each one when trying to formulate an opinion of how the team was performing. They all agreed that a more refined application would be much more attractive if it could consolidate each of the team members responses into a table or chart that could be easily viewed online or printed to take to meetings. They felt that if the information was presented in a summarised manner that quickly showed comparative information for the whole team, it would then be more motivating for them to get their tasks completed, that is: “*Seeing a blank spot for my name would help motivate me to get things done with a sense of urgency!*”

Conclusions

The creation of appropriate contexts, tasks and support roles for teachers and peers are fundamental to developing effective teaching and learning strategies (McLoughlin & Luca, 2000). Collaborative learning technologies offer some unique opportunities both for peer and electronic support of team building and collaboration, and Bloggers can provide opportunities for student dialogue that stimulate interchange of ideas, progress and reflective processes. In the context of the present study, where students were engaged in developing a web site for a real client, clear communication of progress was found to be useful in the maintenance of a positive and supportive environment to help meet the learning outcomes.

The challenge in the next implementation of the online Blogger support tool is to help students recognise that by enhancing the process of planning, tracking and reflection within a team can also lead to fair and equitable teamwork through a process in which the team and tutor are all clearly informed about the progress of each of the team members, as well as any issues and problems that occur during the semester.

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