



## Learning design strategies for online collaboration: An LMS analysis

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Ask any student about their thoughts on group work and the response is likely to be negative. They experience issues around choosing suitable topics/projects/issues, finding a group, getting underway as a group, meeting deadlines, and being assessed for their individual participation. What learning design strategies can be applied to support online collaboration? This case study explores the online collaboration activities of a sampled selection of 72 sites in the learning management system to identify learning design strategies which promote effective collaboration. A framework was developed and applied to provide a consistent approach to the analysis of these sites. The results indicate unique and reusable learning designs that ranged from simple to complex in design.

Keywords: collaboration, learning design, group work, online learning, e-learning, blended learning

### Introduction

Web-based technologies have the capacity to offer students new ways of learning with greater opportunities for social interaction at times and locations suitable for the learner and thus greater flexibility in their learning journey (Horizon Report, 2009). The benefits to learners and the challenges for teachers in the use of the online environment for collaboration are well documented across a range of technologies such as learning management systems (LMS) and web 2.0 spaces like Second Life. The LMS has the potential to provide online collaboration spaces but how does an institution know what learning design strategies are being used to facilitate online collaboration?

Previous studies at the University of Western Sydney (UWS), (Rankine, Stevenson, Malfroy & Ashford, 2009) have found lower than expected levels of collaboration between students in the LMS. Online collaboration, in this study, was classified as students working at a level where they created understanding, built knowledge and developed new ideas as a group using blogs, wikis and discussion boards. A second study by Goldsworthy and Rankine (2009) analysed how the enterprise wide LMS was being used with large classes and the results showed that 15% of units with over 400 enrolments were using online collaboration. Online collaboration, in this second study, was classified as online group assignments and formal group discussions for set collaborative tasks. To further understand the nature of online collaboration, a third study was established to identify learning design strategies that are being used to support, enable and facilitate online collaboration as an essential element of assessment. This paper reports on the preliminary findings of this study by discussing briefly the review framework used in the analysis of LMS unit units and a number of examples to illustrate the range of online collaboration found.

Why do students have negative reactions to group work? In face-to-face or online group tasks there are issues around choosing suitable topics/projects/issues, finding a group, getting underway as a group, meeting deadlines, and being assessed for their individual participation. Online group work also comes

with additional complexities and issues around students feeling isolated, disassociated with group members and teachers, and individual stress around working with others they only know as an online identity. McMillan and Chavis (1986) propose that participants' levels of engagement in a group are related to their ability to influence the activity of the group, but how is this addressed in online contexts? Kling and Courtright (2003) suggest for a group to be effective and form into a community, special processes and strategies are required. Effective groups do not happen serendipitously, they are crafted by the experiences and activities of the participants and supported by scaffolding processes that promote and enable group collaboration (Race, 2002; Salmon, 2000; Brook & Oliver, 2003).

## **Method**

To identify learning design strategies that promote effective online collaboration, the authors had three options (Beer, Jones & Clark, 2009): ask students and staff through surveys or interviews; mine the LMS data; or manually review sites. It was not feasible to conduct a survey and the LMS data had already been mined in previous studies, therefore a manual review of LMS unit sites was conducted to analyse the learning designs supporting effective online collaboration. A framework was developed to support the review. Its purpose was to facilitate a consistent analysis of the learning design strategies used to promote effective online collaboration where it formed an essential element of assessment.

The sampled selection of LMS sites were those units identified as web dependant (76.4%) or fully online (23.6%) during second semester 2009. These 72 units were from a variety of disciplines and year levels (UG 57%, PG 43%). Before commencing the full review of the 72 unit sites, a blind review of 3 unit sites was undertaken and the framework adjusted. An initial step in the review involved determining, via the unit outline/learning guide, whether online collaboration was an assessment component. Further analysis was conducted of those units where evidence of online collaboration leading towards assessment was identified. The use of discussion, chat, group assignments and content were examined, as well as group membership through the LMS group manager, entries in the gradebook, chat logs, discussion messages and feedback provided.

## **Review framework**

The foundation for the Review Framework was adapted from Oliver and Herrington's (2001) model of learning tasks, learning resources and learning supports. This highly regarded and well known model provides a sound basis upon which the identification of learning design strategies could be made in this study. However, other theories and models were drawn upon such as James, McInnes and Devlin (2002), Isaac (2002), Race (2001), Bower, Hedberg and Kuswara (2009), Salmon (2000) and Battye. Hart et al (2008). These theories and models added dimensions of scaffolding, marking, providing feedback, level of assessment detail and guidelines, group membership, assigning roles of students, and specifying the role of the teacher. The authors deemed it important to include in the framework the student cohort characteristics, how groups were selected and topics assigned, what guidance was provided to students on how to work collaboratively, and what technologies were being used to support online collaboration. The final Review Framework is shown in Figure 1 below.

ASSESSMENT	
<p><b>REVIEW FRAMEWORK</b></p> <p>Is Online Collaboration for Assessment taking place in the learning design? Not evident/Basic/Complex (If Not Evident the remainder of the Review Framework is not applied)</p> <p><b>UNIT CONTEXT</b></p> <p>Level of Unit: PG/UG Year Level</p> <p>Cohort Size: Number</p> <p>Discipline</p> <p>Relevant learning outcomes: teamwork, using technology</p>	<p>What learning design strategies are in place that promote effective online collaboration as an essential element of assessment?</p>
	<b>LEARNING ACTIVITIES/TASKS</b>
	<p>Assessment %: What is the breakdown mark for the online collaboration element where a series of task is involved?</p> <p>Do groups have a choice in how they will undertake activity? (eg F2F or online): Yes/No</p> <p>Write a brief summary of the learning activity or sequence of activities.</p> <p>What level of assessment instructions are provided? None/Basic/Detailed</p>
	<b>ENABLING COLLABORATION</b>
	<p>What is the group size? Number</p> <p>How are groups selected? Teacher/self/system/topic/find a group</p> <p>What technologies are used? List LMS tools or Web 2.0 technologies</p>
	<b>LEARNING SUPPORTS</b>
	<p>What evidence of scaffolding strategies exist? List strategies</p> <p>What is the role of the teacher? Describe role</p> <p>What is the role of the student or group? Describe role (rigid or loosely defined)</p> <p>What is marked? Describe process, product, portfolio</p> <p>What level of marking criteria and standards have been provided? None/Basic/Detailed</p> <p>Who provides feedback? Teacher/Group/Peer/Self</p> <p>How are the marks attributed? Group/Individual</p>
	<b>LEARNING RESOURCES</b>
	<p>What resources are available for task completion or support online collaboration? List resources</p>
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Figure 1: Review Framework

## Results and discussion

Of the unit sites reviewed, 13 units (18%) had learning designs with assessment tasks that had either a compulsory or optional element of online collaboration. Of the 17 fully online units reviewed, 3 units (17.64%) were using any form of group work as assessment. There was a higher use of online collaboration in undergraduate 3<sup>rd</sup> year units and postgraduate units than in undergraduate 1<sup>st</sup> and 2<sup>nd</sup> years.

The learning designs identified in the study had a variety of purposes which included: groups preparing for a group presentation; writing groups; an essential step in the learning process towards a group report or an individual report; students supporting each other as they worked on individual projects; problem solving in real-life scenarios; role-playing in an authentic setting; exposure to multiple perspectives; engaging discussion on unit readings or topics; and project-based teamwork. Although it could be seen that the purpose of the online collaboration was not unique, it was found that the learning designs were unique and in the majority of cases they were complex in design. This reaffirms the view of Oliver and Herrington (2001) that “each design provides its own affordances and opportunities for learning and is distinct in some way from the others” (p.77). Although some learning designs were basic in relation to the level of learning supports and learning resources provided it was also found that the designs could all be reusable in other contexts and disciplines. In this short paper, three very different examples will be explained to highlight the variety of online collaborative activities found. These examples were selected as they aligned with the review framework in greater depth than other learning designs found.

### Learning design: Role play

A role-playing learning task was conducted as a case conference online over a two week period using asynchronous discussion for a cohort of 18 students. In this learning activity students assigned themselves to a role representing a particular government agency that participated in the case conference and the teacher provided support material particular to each role. A case study was provided and each role was played by three students who used private discussion topics to develop an understanding of the role and the responsibilities of their particular agency. Their participation in these role-based discussions was worth 5% and their participation in the case conference was worth 10%. Students were required to act in their role as they would in a real-life case conference and each case conference group shared outcomes by posting messages in an open discussion topic before all students discussed case recommendations. Each student submitted a report worth 35% on the process involved

from an individual and agency perspective. For this activity, the roles undertaken by students were clearly defined by details provided by the teacher and the authority and responsibilities of the specified agencies involved in the case.

### **Learning design: Student facilitated blog**

In this learning design, pairs of students led a blog on a particular topic reading and facilitated the blog discussion for that reading over a two week period. This unit was project-based with 20 students. To support this activity, students had access to models and guidelines on how to provide feedback to other students and how to entice discussion. Guidelines included suggestions for students on how they could lead the blog: for instance, distributing open-ended questions, diagrams or other stimulators for other students to consider as they read the article and surveying students on the key concepts within the article for collation to demonstrate the author's point of view. Other examples included choosing several quotes to facilitate the discussion of their meaning and significance outside the context of the reading, and asking other students to discuss how they would handle a real-life situation. Throughout the semester there were other discussion and blog activities that were facilitated and moderated by the teacher. This modeled effective moderation skills for students to use in their task. Each student pair submitted a 1000 word summary of their topic reading incorporating student responses as an assessment task worth 25% at the end of the two week period. The marking of this task was on the collaborative process as well as the product submitted by the student pair.

### **Learning Design: Student mentors**

Across the study there were numerous examples of learning buddies/mentors to provide support. In a project-based unit, students assigned themselves to study/mentor groups to support each other during the unit with the aim to help each other focus, share resources, plan and ask question and critically analyse each other's work. The majority of groups consisted of four students while two others were eight and eleven respectively. Each group was required to collaborate on a group presentation which they presented to the face-to-face class. The group presentation had to address the group processes used to support each other, their progress on the assessment as well as group and individual plans for the remainder of the unit. Each student self-assessed their own contributions to the group as a mark out of 10. The teacher included this mark with the overall mark for the group to calculate each student's individual mark. The group continued their learning buddy/mentoring purpose for the remainder of the semester. Student comments were particularly insightful about the value of this learning design. There were messages in some groups where students offered words of support, encouragement and empathy as they discussed their work and meeting submission deadlines. It was seen in all study/mentor groups that connectivity between learners was present which was not seen in any of the other 13 units to this extent.

## **Conclusion**

Online collaboration requires scaffolding though the use of discussion for introductions, frequently asked questions, assessment questions, a student common room; group consultation time with teacher; scaffolding within activities; and teacher modelling good moderation and facilitation skills in discussions. Online collaboration also requires the provision of learning resources such as set questions/headings to address; models of past reports and presentations; technology user guides; case studies and scenarios; role, topic and discipline based information and guidelines; templates for use during task; how to work as a team; how to provide feedback; how to debrief as a group; and how to collaborate online.

The final version of the review framework did not include an element on measuring the effectiveness of the learning designs as there were concerns around not being able to accurately and authentically measure effectiveness from the authors view. Although some evidence on the effectiveness of the learning designs was seen during the review, it was not the case for all learning designs found. Although the review framework was purely developed for the review it became evident it could also be used as a planning tool. If the review framework was to be used as a tool for planning, the use of online collaboration for assessment could be included as well as strategies to measure effectiveness.

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