

A Novice Lecturer's Foray into Creating an
Engaging Online Learning Experience in a
Higher Education Environment

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Abstract

As student enrolments increase in online learning courses in higher education it is imperative for universities to address a number of challenges in order to provide quality learning experiences. One of the key challenges is identifying how to construct interactive and engaging student-centred environments that can support communication and collaboration. This article describes how an existing instructional framework was used to redesign an online unit to create a student-centred learning environment supported by technology to encourage learners to interact, communicate and collaborate. It explains the rationale for the unit design and how new technologies were used by students as cognitive tools to solve real-world problems to demonstrate their knowledge and understanding of the unit learning outcomes. The evaluation findings revealed that the redesigned unit was effective and that students were keen to interact and engage with their peers and lecturer.

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Introduction

Online learning is commonly seen by education administrators as a way to reduce program delivery costs and to efficiently organise and manage learning programs with little regard for the quality of the teaching and learning experience (Oliver, 2000). Many online offerings tend to mirror traditional courses where the teacher presents information to the students as a lecture or demonstration, the students complete learning activities to practise the tasks or concepts covered, and learning is assessed through exams or individual assignments. This model of instruction is easy to replicate, however, it leaves learners to study in isolation and is often ineffective (Johnson & Aragon, 2002; Oliver, 2000).

Online learning is not just technologies or content followed by a test. Rather, it is a complex mix of physical and social technologies, applications, activities, and presentations designed to teach, combined with a set of services that helps support the entire online learning experience. It is more than just delivery of information—it is about communication, collaboration, performance support and knowledge sharing (Knight, 2002 & Woodill, 2007).

As the number of students enrolling in online higher education courses is increasing, higher education is taking a more strategic approach to embracing online learning. Creating a vision for online learning involves many challenges, such as: teacher support and compensation, budget requirements, student needs and technology considerations. However, given the continued growth in online learning, it is imperative that universities address the challenges to provide quality online learning programs (Bonk & Kim, 2006).

Context

I was employed to redesign and deliver an online unit on Workplace Learning. The unit was an optional unit for an undergraduate degree in Business Management. It was to be delivered as a fully online unit available to local and international students. The unit objectives had been redefined and a new text book selected. Thus, the assignment tasks and course content needed to be modified to align with the new objectives and text book. The brief also required a range of activities and resources to be developed to create a more interactive and engaging learning environment.

One unit objective required students to facilitate a planned training session. Delivering training in an online environment presented a major design challenge which required careful consideration. Exploration of the university learning management system (LMS) revealed an integrated web conferencing facility was available, and I realised this facility could not only provide the opportunity for students to connect, communicate and collaborate but could also be used by students to deliver training in an online environment.

The course design was based on a constructivist approach that included cognitive learning theories and the principles of adult learning. *Cognitive theories of learning* “emphasise the importance of the active participation of the learner in the learning process” (Smith, 1998, p. 55), whereas *adult learning principles* (Burns, 2002; Knowles, Holton III, & Swanson, 1998; Kolb, 1984; McCarthy, 2000) are more concerned with “improving the way in which people learn by improving training practice” (Smith, 1998, p. 68).

Unit design

Documentation for the previous implementation clearly identified the unit was based on a constructivist learning approach and included a number of assignments that required students to construct their own knowledge. However, a traditional teacher-centred information delivery model was used that provided very limited opportunities for student interaction, communication and collaboration.

The information delivery model is common in higher education where learning management systems are primarily used to manage learners rather than promote rich interactive learning experiences (Bonk & Kim, 2006). Research indicates the most effective online environments create real-life contexts that provided reasons for collaboration and co-operation in meaningful ways to reflect how the learning will be used in the workplace. They focus on activity-based learning where learning is structured around real-world tasks rather than activities structured around the content and provide learners with the resources and supports to complete the task and develop the necessary skills and knowledge (Oliver, 2000).

Johnson and Aragon (2002) suggest some of the greatest challenges for designing effective online programs are creating pedagogically sound content, avoiding information overload and devising ways to facilitate active learning. In order to meet these challenges we need to “adopt a new philosophy of teaching and learning that is appropriate for online instruction” (p. 2) and that this new philosophy should combine the most powerful aspects of behaviourism and social constructionist theories.

They devised a pedagogical model for online instruction based on specific aspects of adult learning theory and identified seven principles that could be used as a framework for designing online courses (Figure 1).

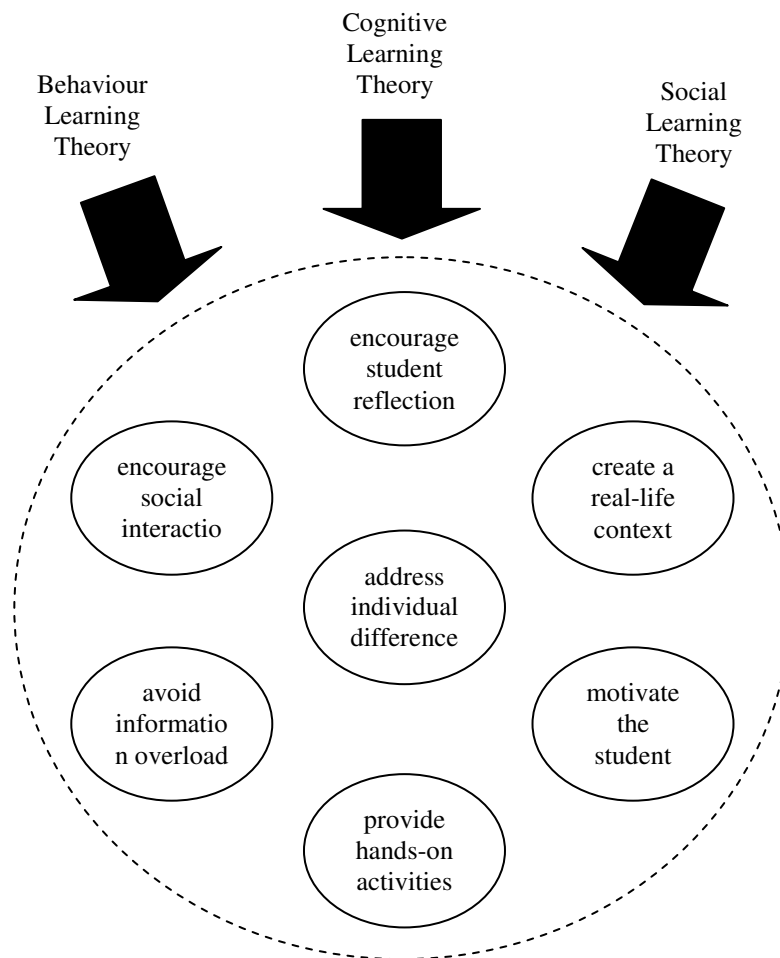


Figure 1: An Instructional Strategy Framework for Online Learning Environments
(Johnson & Aragon, 2002, p. 3)

This instructional framework was used to guide the design of the new implementation to create a more student-centred learning environment that could encourage learners to interact, communicate and collaborate. The new implementation was based on four learning outcomes and three assignment tasks were developed to enable students to demonstrate the use of higher level cognitive skills to achieve the learning outcomes (Table 1). Real-world scenarios were used to provide a meaningful and relevant learning experience for students. Ethics clearance was obtained to seek permission from industry to use copies of real workplace documents, which were willingly provided on request.

A live case study was used to guide student learning and weekly teacher-led web conference sessions included to provide scaffolding support for students and give them the opportunity to interact, communicate and collaborate with their peers.

The table below outlines the relationship between the learning outcomes, resources and assessment tasks.

Student Learning Outcomes	Major Learning Resources	Assess #1	Assess #2	Assess #3
Justify the importance of learning and development to an organizations ability to obtain and retain competitive advantage;	<ul style="list-style-type: none"> Textbook – Chapter 1 eReserve 	X Part A	X	
Outline the national structure of workplace learning indicating participants, customers, training organizations, certification and accreditation processes	<ul style="list-style-type: none"> eReserve 3 resources 	X Part A		
Develop a workplace learning program based on relevant and appropriate learning design principles	<ul style="list-style-type: none"> Textbook – Chapter 1-6 eReserve 		X	X
Facilitate a planned training session for a specified need	<ul style="list-style-type: none"> Textbook – Chapter 1-8 eReserve 	X Part B		

Table 1 - Learning Outcomes, Resources, Assessment Relationship

Unit implementation

Eighteen full-time and part-time students enrolled in the unit. Two students (one male and one female) did not access the unit and withdrew in the first week. Sixteen students commenced the unit: two men and fourteen women, aged between twenty and fifty five years. Six were from regional areas, one was an international student and nine were local students. The course was implemented using the Faculty learning management system (LMS) web site, *Blackboard*. The LMS was opened to students one week prior to commencement of the unit. It provided student access to the course content, online learning activities (LAMS), online resources, discussion forums, student blogs and the web conferencing environment.

Address individual differences

Content was presented in multiple formats; on-screen text, print materials, hands-on activities, PowerPoint presentations, recorded lectures from the previous implementation and live online synchronous meetings to cater for different learning styles. Students were polled to determine the most suitable times for the weekly online web meetings and a three week rotating schedule was implemented. The online sessions were recorded so that students unable to attend the live session were able to view and listen to the recording after the session.

Avoid information overload and provide hands-on activities

Content was broken into weekly chunks based on the chapters in the textbook and relevant resources were included in the weekly modules. Each module was based on Kolb's (1984) four stage experiential learning cycle to explain why the information was important, what learners needed to know, how to apply the new concepts and to encourage learners to apply the learning to new situations (Burns, 2002; McCarthy, 2000).

Motivate the student

Collaborative online learning activities were created using a learning activity management system (LAMS), a “visual authoring environment for creating sequences of learning activities” (LAMS, 2002-2009 ¶ 1) to motivate learners to interact with the content. Crossword puzzles, web links, videos and quizzes were some of the methods used to enable learners to interact with the content and check their progress.

Encourage social interaction and student reflection

Assignment 1 Part A required students to post a response to one of three discussion topics each week, for six weeks and to respond to other student posts on the community discussion forum. They were also required to complete a specific application activity each week and to reflect and comment on their performance in an individual blog.

Create real-life context

Assignment 1 Part B required students to facilitate a 30 minute online training session based on a real workplace scenario. Copies of actual workplace documents were obtained to create a realistic scenario that provided students with the flexibility to select a training topic from a wide range of suggested topics. Assignment 2 required students to develop a strategic program and training plan based on a current workplace issue of their choice. Assignment 3 required students to create a professional quality training manual and session plans based on their training program.

<p>Workplace scenario</p> <p>Your company has adopted a learning strategy to implement e-Learning into your workplace (copy of strategy available on Blackboard). One aspect of this strategy is the up-skilling of all employees involved in training.</p> <p>Your job is to train a small group of your peers on how to use a piece of new technology.</p> <ul style="list-style-type: none"> • You are required to plan, deliver and review a short online training session. • The session should run for approximately 30mins. Remember it is a learning activity NOT a presentation. Ensure you include appropriate activities so that you can monitor the learners progress and be able to evaluate their performance at the end of the session. • Select a new technology that could be used to deliver or enhance training. Note: Pick something you are already familiar with or something simple that you can learn before commencing this assignment.

Figure 2: Assignment 1 Part B Deliver a Training Session

Unit Evaluation

The purpose of the evaluation was to determine whether the revised course was effective in facilitating student learning and to identify areas that could be improved in future offerings.

“Evaluation is not equivalent to research” (Phillips, Bain, McNaught, Rice, & Tripp, 2000, p. 1.3) however by employing research techniques “if we can show that what we know (our

theory) stands up to public scrutiny” (McNiff & Whitehead, 2006, p. 20) then we can claim our findings are reliable, valid and trustworthy (McNiff & Whitehead, 2006; Phillips, et al., 2000).

Evaluation Methodology

Bain’s (2003) adaptation of Alexander & Hedberg’s integrated evaluation framework provided overall guidance and suggested appropriate data collection methods for each phase. This evaluation focused on the development and implementation phases of Bain’s framework.

A constructivist mixed method approach involving formative and summative evaluation was deemed appropriate for the project. This approach enabled data to be collected from multiple sources, and perspectives during and after the implementation phase to build a valid argument about the effectiveness of the unit (Ruhe & Zumbo, 2009).

Four questions identified by Reeves and Hedberg (2003) cited in Agostino, Meek and Herrington (2005) were used to guide the evaluation design:

What kinds of decisions can be anticipated from the evaluation?

The evaluation was required to inform a decision on whether the revised unit was effective in facilitating student learning and whether any improvements could be made for future implementations.

What questions need answering in order to make the decisions?

1. What were the student perceptions about the unit design?
2. Was the design approach effective in facilitating student learning?
3. Were the learning outcomes achieved?
4. What improvements could be made to the unit?

What information is needed to answer the questions?

Information required for the development phase: *Formative monitoring* of the learning environment and learning process from both student and lecturer perspectives (Bain, 1999). Formative evaluations were conducted in week 4 and minor modifications were implemented to improve the unit. Information required for the implementation phase: *Summative evaluation* of the learning outcome from both the student and lecturer perspective and innovation validity from the lecturer perspective (Bain, 1999). Summative evaluations were conducted at the end of the semester and an informal report on effectiveness and recommendations for improvements were discussed with the unit coordinator.

What data collection instruments are required to obtain the information?

The following quantitative and qualitative data collection methods were employed:

- Student statistics: artefacts and assessment results
- LMS statistics: the number of online forum discussions and blog posts
- LAMS statistics: the number of learning modules and learning activities completed
- Web conferencing statistics: the number of attendees per session
- Formative online student questionnaire conducted in week 4
- Formative lecturer reflection conducted in week 4
- Summative online questionnaire conducted at the end of the semester
- Summative lecturer reflection conducted at the end of semester

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- Unsolicited student comments (qualitative data obtained through email correspondence, verbal communications, written comments and nomination advices).

Note: these data sources were collected regardless of conducting the evaluation.

Quantitative methods enabled data to be collected and analysed using standardised measures so that student responses could be grouped into relevant categories to facilitate comparison and statistical analysis. Statistical data was analysed using simple numbers and percentages. Qualitative methods allowed more detailed information to be collected about the themes identified and the ability to identify new themes that emerged from the responses. Textual comments were used to corroborate quantitative responses and where appropriate direct quotes have been used to faithfully represent participant experiences (Ezzy, 2010; Patton, 1990; Willis, 2010).

Evaluation Results

Eighteen full-time and part-time students enrolled in the unit. Two students (one male and one female) did not access the unit and withdrew in the first week.

1. What were the student perceptions about the unit design?

Eight students (50%) responded to the formative survey conducted in week 4.

- Course design – 69% agreed
- Interface design – 75% agreed
- Interaction – 51% agreed
 - Web conferences (synchronous) - 38% agreed
 - Forums (asynchronous) – 63% agreed
- Learning materials (LAMS) – no-one responded to this question
- Lecturer support - 75% agreed

Qualitative formative survey question: *An aspect of this unit which I appreciate is:*

- “The manner in which the unit is presented and the assistance and encouragement provided by the lecturer.” (course design, lecturer support)
- “Illuminate (sic) live, blogs, constant effort required ... that is three things. And fourth no exam!” (interaction, reflection, course design)
- “Opportunities to interact with other students.” (interaction)
- “Self learning on various unit topics.” (course design)
- “I am finding the whole unit to be interesting, in comparison to my other unit. I have so far been unable to attend online meetings, however, I feel as though the LAMS activities and the weekly forums have been as helpful as being in the meeting.” (course design, learning activities, interaction)
- “Using new technology.” (technology)

Eight students (50%) responded to the summative survey conducted at the end of semester. Overall satisfaction with the unit was 88% and with the lecturer was 100%.

- Course design – 100% agreed
- Organisation – 88% agreed
- Learning materials – 100% agreed
- Assessments – 100% agreed
- Generic skills – 88% agreed

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- Critical thinking skills – 75% agreed
- Learning effectiveness – 75% agreed

Qualitative summative survey question: *What were the best aspects of this unit:*

- “Self pace and ability to work to my time table within reason.” (course design)
- “Online learning. Feeling part of the university community. Student contact. Feedback.” (interaction)
- “Online liaison with other students.” (interaction)
- “Having the online meeting so although it was an external unit there was still interaction with the lecturer and other class mates.” (interaction)
- “Introducing me to the wide range of technology and tools and learning to use that technology.” (technology)

2. *Was the design approach effective in facilitating student learning?*

Course design: There were relatively few posts on the support Q & A forums with only 26 posts made over 12 weeks on the weekly forums (by 5 students) and only 4 posts on the assignment forums (by 3 students). This indicated students had few difficulties in understanding the unit guidelines and instructions.

Interaction: All sixteen students introduced themselves on the Introduction forum (no-assessable) and many responded to peer postings (41 posts). Approximately 30% of students attended each online session. All sessions ran over time primarily due to students wanting to stay on and chat after the session. This indicated students were pleased to have the opportunity to talk “live” with each other and interact socially.

Learning materials: Only two students completed all LAM modules. Most students accessed at least two modules but most only progressed through the first two or three sequences of activities.

Unsolicited student comments collected included emails, written comments on assignment submissions and notification advices for nominations:

- One student commented that she had done her whole degree online and that this, her final unit, was the first time she had spoken to her peers or facilitator. (verbal comment made during the first online web conference meeting)
- “Thanks for advice during this unit I have really enjoyed it and have learnt ideas and processes which I will now use and implement in my own workplace. (email)
- “Apart from the IT frustrations it has been a great experience. Thanks.” (comment on final assignment submission)
- “I have no problem with you using my coursework. I really enjoyed the unit and your tutorials so I am glad that others will have the opportunity to experience it.” (email)
- “Jenni provided a great online learning environment with challenges of technology. She encouraged her students to experiment in a way that will help their learning and employment. As an external student it was great to have real student and staff contact.” (Student Guild Thank a Teacher Initiative)

Qualitative formative survey question: *An area where I feel this unit could be improved is:*

- “Perhaps schedule a forum to start later than 6.00pm. I work full time and it is virtually impossible to be home in time to join these sessions.” (interaction)

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- “Either less online lectures or many at various times.” (interaction)
- “I was pretty confused at the start. Hopefully I am getting the hang of it now. I’m also finding it difficult to make the meetings.” (interaction)

Students were invited to complete a poll in the first week of the unit to indicate which times would suit them best for the online meetings and 8 students responded.

Formative lecturer reflection: The intention of the weekly web conference was enable students to become familiar with the virtual environment so that they would be comfortable using it to deliver their training session and also to replicate the F2F classroom experience where they could share their thoughts and ideas about the learning concepts. However low attendance rates for some web conferences made it difficult to provide an engaging learning experience and some students were unable to attend any of the sessions. As a result of the above feedback one session was rescheduled to start at 7pm.

3. *Were the learning outcomes achieved?*

The sixteen students who actively commenced the unit, completed the unit, and all but one passed. All of the eight students who completed the summative questionnaire felt that the assessments in this unit accurately evaluated their learning however one student commented there were far too many assignments compared to on campus students.

For Assignment 1Part B each student was required to post a response to one forum question each week and respond to at least three other posts over the six week period (173 posts). This result was over 20% more posts than the required minimum, and a review of the discussions showed that students were actively engaged with the content and interacting with their peers. They were also required to post a blog entry each week over the six week period. Twelve students posted an entry each week. Two students posted five entries, one student posted four entries and one student posted one entry. Five students failed this assignment task.

For Assignment 1Part B (where students delivered training), thirteen students used the web conferencing tool to deliver an online training session. Two students had issues accessing the web conference facility, so one used a trial version of another tool and the other delivered a face to face training session in their workplace. One student did not submit the assignment as she gave birth to her first baby during week 6 and discovered a baby was more demanding than she expected. She decided not to submit this assignment so she could focus on the major end of unit assignment.

Summative lecturer reflection: From a teacher's perspective the web conferencing tool was a practical solution to enable students to achieve the learning outcome that required them to deliver a training session and to verify it was the student's own work which is often difficult to achieve in an online environment.

4. *What improvements could be made to the unit?*

Qualitative summative survey question: *What changes would you suggest for this unit?*

- “The It technology requirements to deliver training more thought and testing of sites to be used and consideration for people's ability to access these should be made. Elluminate problems and WIZQ access problem wasted a lot of my precious time and made the unit aspects very frustrating.”
- “Make it a first year subject for all mature age students!”
- “None. I enjoyed it as it was. The online session times were varied and suitable for most people.”

Summative lecturer reflection: Even with the revisions, I felt the unit still contained too much teacher directed content, and resolved that future iterations would include student research activities that will enable them to contribute to the academic content for the unit.

The use of the synchronous web conferencing facility did not flow as smoothly as expected for three reasons. Firstly because the live case study activity relied on students having read the information in the text prior to attending the meeting—which most had not. This time would be better spent developing a social presence and encouraging a community of learning. Secondly most sessions consisted of very few real-time participants (maximum 5 people) so encouraging discussion and sharing ideas was difficult and thirdly the initial web conferencing tool was discontinued in the middle of the semester and a replacement tool needed to be located. However, this also had an unexpected benefit as the need for students to learn a new tool in a short period of time demonstrated how quickly learners can adapt to change and rise to the challenge of using new technologies to achieve the learning outcomes. The LAMS activities required considerable time and skills to create, but appeared to add little value to the overall learning. I think this activity could be deleted to provide additional time for students to a) research the key concepts for this unit of learning and b) select and research a web conferencing tool of their choice to deliver their training session.

And finally, the assignments could be revised so that all learning outcomes can be demonstrated by completing real-world tasks that could include peer review and self reflection of their own performance.

Conclusion

In summary, the majority of participants rated their learning experience as positive and the evaluation evidence confirmed Johnson and Aragon's instructional framework was successful in creating a quality online learning environment, however, from a practitioners' point of view it required relatively high technical skills and time to design and implement it.

One failure of the evaluation tools was the lack of consistency between the questions in the formative and summative survey which made it difficult to compare the data for all concepts. For example: interaction rated relatively low in the formative survey and no specific question about interaction was included in the summative survey which made it difficult to determine the students overall perceptions at the end of the unit. However qualitative data from both surveys indicated that many students liked the opportunity to communicate and interact with their peers. Further research is required to confirm the validity of this assumption.

So if online learning is to be embraced by higher education the question remains, how will universities address the challenges to provide sustainable quality online learning programs?

Future Research

After delivering this unit, I came across an article written by Herrington (2009) on authentic e-learning in higher education. In her article, she describes ten characteristics of authentic tasks that can be used to design real-world complex tasks that learners will encounter in their professional working life. She believes authentic learning tasks are “an appealing pedagogical approach” (p. 15), however, more rigorous research is required in this field in order to verify that the pedagogical approach can be consistently replicated across various fields of learning. She encourages future researchers to use a design-based research

approach so that both “practical and scientific contributions” (p.16) can be made to the field of teaching.

Herrington's article resonated with my own experience of online learning and has ignited a keen desire to explore this approach in more depth. I am particularly interested in exploring how the characteristics of authentic tasks may be used to create sustainable online learning and blended learning experiences where students can use technology as cognitive tools to solve complex real world problems (Herrington, 2006, 2009; Herrington, Reeves, & Oliver, 2010) as I feel this constructivist approach may have the potential to improve the quality of online higher education courses.

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