Designing an authentic blend: Development of a '*real-life*' learning environment for higher education

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Increasing student enrolments in higher education have created new challenges for universities to address, if they are to provide a quality learning experiences for all students. One key challenge is identifying how to construct more flexible, interactive and engaging student-centred environments that can support students' transition to the workplace. This article describes how teaching and learning processes have been reengineered to design an authentic blended learning environment that offers students *real-life* learning experiences supported by new technologies.

Keywords: real-life tasks, blended learning, higher education

Introduction

Over the past few decades the computerisation of work has resulted in many jobs becoming much more knowledge intensive and the rapid expansion of modern technologies are "changing the ways we produce, consume, communicate and think" (Collins & Halverson, 2009, p. 5). Yet, many universities continue to use traditional teacher-centred information delivery modes (Maor, 2003) that focus on delivering theory via lectures, and assessing students through end of semester exams. This approach no longer seems appropriate for educating students in the 21st century as McCombs & Vakili describe;

> *... in the 21st century world, content is so abundant as to make it a poor foundation on which to base an educational system; rather, context and meaning are the scarce but relevant commodities today. This alters the purpose of education to that of helping learners communicate with others, find relevant and accurate information for the task at hand, and be co-learners and partners with teachers and peers in diverse settings and leaning communities that go beyond school walls (2005, p. 1582).*

A more student-centred learning approach that includes pedagogical techniques such as online collaboration, case-based learning and problem based learning (Kim & Bonk, 2006) will better prepare graduating university students for the first century workplace.

One way to create an environment that supports and encourages active learning through social collaboration (Sitzmann, Ely, & Wisher, 2007) and replicates the work environment is to develop a blended learning course where students complete real-life tasks supported by new technologies.

This paper discusses how a blended learning environment was designed and delivered to better prepare business students graduating from university for the complexities of the first century world.

Authentic learning

Authentic learning environments are not content driven they are process driven and require students to complete complex real-world tasks over a period of time in collaboration with others as they would in a real workplace (Herrington, 2006). Authentic tasks that encourage and support student engagement and immersion in a cognitive real environment can facilitate self-directed and independent learning (Herrington, 2006), encourage confidence, cultivate "portable skills" such as judgement, patience, synthetic ability and flexibility that most learners have difficulty in grasping (Lombardi, 2007).

Educators view "authentic learning" from a variety of different perspectives (Bain, 2003; Grift, 2009; Herrington, 2006; Splitter, 2009), however, it appears many believe the more students are exposed to authentic communities of learning the better prepared they will be to deal with "the messiness of real-life decision making" (Lombardi, 2007, p. 3) required in the workplace (Agostinho, Meek, & Herrington, 2005; Grift, 2009; Herrington, 2006; Herrington, Reeves, & Oliver, 2010; Lombardi, 2007; Splitter, 2009).

Authentic learning tasks that require students to use technology as cognitive tools to seek information, construct knowledge, communicate and collaborate effectively have the potential to improve student engagement and outcomes (Herrington, Reeves, & Oliver, 2006).

New technologies

New technologies are transforming every aspect of work. Today reading and interacting with the web, memos, emails, spreadsheets and statistics, analysing problems, digital video tools and PowerPoint presentations are routine everyday tools in modern workplaces (Collins & Halverson, 2009).

Using web-based applications to create life-like situations (Lombardi, 2007) students can work together on group projects in the classroom, view lectures, access readings, resources and other relevant content online at a time and place of their choice to apply the knowledge and perform the skills they are learning at university.

The affordances of new technologies provides the opportunity for universities to create engaging learning experiences that replicate realistic workplace environments, enabling better support for student transition to the workplace.

Blended learning

Blended learning is a combination of face-to-face teaching together with any form of synchronous or asynchronous online learning technologies (D'Cruz, 2003; Duhaney, 2004; Gamble, 2005). The advantage of blended learning is that it gives students the flexibility to learn in various modes such as; face-to-face or online to suit their particular needs (Trasler, 2002). This flexibility is important as almost 70% of tertiary students (aged between 20 and

24) are trying to combine a part-time or full-time job and study (ABS, 2008). Therefore the ability to blend different modes of learning enables students to meet the competing demands of work and study.

According to the research blended learning environments should incorporate four key learning principles: relevance (Huang, 2001; Murphy, 1997), authenticity (Herrington, 2006; Herrington, Reeves, & Oliver, 2007; Lombardi, 2007), interaction (Cheetham & Chivers, 2001a; Laurillard, 2002; Wang, Hinn, & Kanfer, 2001) and reflection (Boud, Docherty, & Cressey, 2006; Cheetham & Chivers, 2001b).

Until recently it has been difficult for educators to incorporate these four key learning principles. However, new technologies such as social networking websites, wiki's, blogs, and other online tools that enable people to communicate and collaborate (Kim & Bonk, 2006) have made it possible to create a plethora of blended learning environment that can provide relevant, authentic, interactive and reflective learning options.

This study

The aim of this study is to investigate the effectiveness of an authentic learning framework supported by new technologies for the design and implementation of a blended learning. At the end of semester quantitative and qualitative data will be collected to gather information to answer the following three research questions;
1. What elements of authentic tasks applied in a blended learning environment, support (or hinder);
   a. Self-directed and independent learning by undergraduate students?
   b. Development of portable skills including judgement, patience, synthetic ability and flexibility by undergraduate students?
   c. Development of undergraduate students to be workplace ready?
2. What elements of authentic learning applied in a blended learning environment, support (or hinder)
   a. Undergraduate student task engagement?
   b. Collaborative learning by undergraduate students?
3. Is an authentic blended learning model sustainable using standard faculty resources?

A partial educational design research methodology has been employed for this study. Like action research, design research is accomplished at the coal face however it involves an ongoing iterative process to monitor the effectiveness of a specifically designed artefact "to provide immediate (and accumulating) feedback on the viability of its 'learning theory' or 'hypothetical learning trajectory' " (Kelly, 2004, p. 105).

Unit context

Traditionally, students in the School of Management studying unit MAN3655 Workplace Learning and Development were divided into two separate courses. On-campus students attended a weekly three hour face-to-face workshop and had access to lectures and other support resources via the Blackboard learning management system (LMS). Off-campus students accessed a separate Blackboard unit and relied solely on the online materials and online support from the lecturer. Until recently, the on-campus course was offered in first semester and the off-campus course in second semester. This year both courses were offered in second semester which presented the opportunity to blend the two courses together into

one online environment where all students would access the same resources and complete the same assignment tasks.

The blended course offered off-campus students the opportunity to attend any of the on-campus workshops (where practical) and on-campus students the flexibility to study online if they were unable to attend the face-to-face workshops. Class-time focused on providing scaffolding and support for students to work together as a team and introduce them to new technologies such as: web creation (e.g., Weebly, Yola, Google Sites), communication (e.g., Skype chat) and collaboration (e.g., Google Docs and Diigo) tools. Lectures and other learning resources were provided online so all students could read and learn the underlying concepts required to complete the tasks at a time and place to suit them.

Unit design

Herrington et al's (2010) authentic learning framework (see appendix 1) supported by new technologies was used to guide the design of the new blended course to create a more student-centred learning environment. The technologies selected provided students with access to a range of resources to assist them to develop the necessary skills and knowledge to complete the tasks (Oliver, 2000) and encourage them to interact, communicate and collaborate with their peers.

The course was designed to achieve four learning objectives through the completion of three assignment tasks. The tasks were developed to allow students to demonstrate the use of higher level cognitive skills to achieve the learning objectives (see Table 1).

Table 1 - Assessment tasks aligned to unit learning objectives

Assign Task	Unit Learning Objectives
Assignment 1: Due week 4 – 20% Job Application & ePortfolio (individual)	Compare and contrast the major learning theories. Justify the need for and importance of, learning and development to support the achievement of organisational goals.
Assignment 2: Due week 8 – 30% Training Session & ePortfolio (individual)	Plan and evaluate a training session for a specified learning need.
Assignment 3: Due week 12 or 13 – 50% Training Program (pairs) & ePortfolio (individual)	Produce a training manual based on relevant and appropriate learning design principles. Conduct a planned training session for a specified learning need.

The central element in the design of an authentic learning environment is the task students are required to perform (Herrington, Reeves, Oliver, & Woo, 2004). Authentic tasks that encourage and support student engagement and immersion in a cognitive real environment can facilitate self-directed and independent learning, encourage confidence, and cultivate "portable skills" such as judgement, patience, synthetic ability and flexibility that most learners have difficulty in grasping (Lombardi, 2007).

A scenario was developed around a fictitious training organisation: ASK Learning Solutions to reflect the way the knowledge and skills would be used in real life and a website created

(see: https://sites.google.com/site/asklearningsolutions/home) where students could access learning and support resources as they would via a real workplace Intranet or the Internet.

A web-based e-portfolio was selected as the vehicle for students to showcase the products they created for this unit. This format enabled students to demonstrate their skills and knowledge in creating a range of workplace training plans and training resources and to reflect on their learning. It also provides the opportunity for students to continue using their e-portfolio after the unit has finished. A recent survey conducted by Ward and Moser (2008) suggests students seeking employment would benefit from sharing job related artefacts with prospective employers, however they need assistance in connecting the contents of their e-portfolios with relevant job specifications.

Real life university constraints require student learning to be assessed at multiple points throughout the semester the production of the e-portfolio content was divided into three assessable stages. Each task was based on real work situations that were sufficiently complex to ensure students utilised all of the workplace learning concepts covered in the unit to produce a quality solution that would be acceptable in the workplace. Herrington et al's elements of authentic tasks (2010, pp. 46 – 48) were used to gauge the authenticity of the tasks described above (see appendix 2).

The tasks are described below:

Task 1: ASK Learning Solutions is a large WA based training organisation. They are currently advertising a position for a number of Learning & Development Consultants. To be considered for this position you are required to submit an ePortfolio with evidence of your training knowledge and skills and a written statement addressing two selection criteria.

Task 2: Congratulations! Your application for the position of workplace learning and development consultant with ASK Learning Solutions has been successful. All ASK employees are required to complete the company online induction program, maintain a reflective eJournal and continue to develop their ePortfolio. Your first job task is to plan a one hour training session for a specific need then evaluate one of your colleagues' training session plans and provide them with feedback for suggested improvements.

Task 3: You have worked hard and have been promoted to the position of workplace training supervisor. Your new role requires you to work as part of a team to develop a workplace training program based on relevant and theoretically sound learning principles. Working in pairs you will design, develop and evaluate a training program that will run over a number of sessions (days, weeks, months) and be presented as a complete Training Manual with plans and support materials so other trainers could easily access and deliver the training program. Working with your partner you will then deliver and evaluate a **30 minute** training session using either a face-to-face or online delivery approach. All finished products are to be added to your eportfolio and reflections on this task documented in your reflective eJournal.

Unit implementation

The course was implemented using the University learning management system (LMS) web site, *Blackboard* and an external website which was specifically set up: *ASK learning Solutions*. The LMS and website were opened to students two weeks prior to commencement of the unit. The LMS provided student access to the workshop content, lectures, discussion

forums, and assignment submission facilities. The ASK web site provided student access to a range of online learning resources such as research articles, web site creation tools, video tutorials, a Skype group chat, a Diigo social bookmarking group, Google Docs and specific resources for each assignment task. The lecturers created their own eportfolios and worked alongside the students adding resources and blog entries to model expected outcomes and example student assignments from previous units were also available on the ASK website.

The course commenced in semester two, 2011 and runs across a thirteen week semester. Forty eight students enrolled in the unit. Twenty five enrolled in on-campus mode and twenty three enrolled in off-campus mode. The on-campus cohort consisted of 50% male and 50% female students aged between nineteen and twenty seven years. Only two students were over twenty five and 50% were international students, primarily Chinese. The off-campus cohort consisted of six male and seventeen female students aged between twenty and forty three years, 50% of whom were over twenty five. The off campus cohort include eight students from regional Western Australia and one interstate student. The remaining fourteen students reside in the Perth Metropolitan area.

The new blended course enabled students to vary their participation between on campus seminars or online learning as they desired. Some weeks the on-campus workshop was replaced with an online component where students were required to complete a range of online activities. For example in week four students completed the ASK online staff induction tasks and selected their topic for task 2 and in week seven students peer reviewed draft sessions plans and provided feedback before the plans were submitted for assessment.

Unit evaluation

The aim of this study is to investigate the effectiveness of an authentic learning framework for the design and implementation of a blended learning environment supported by new technologies. An interpretive qualitative approach will be used to guide the analysis and understanding of the data as this approach focuses on "how people think about and interpret what they are doing" (Ezzy, 2010 p.68) and is compatible with both the subject and the framework (Walter, 2010). This approach will enable researchers to build a valid argument about the effectiveness of the course (Ruhe & Zumbo, 2009).

At the end of the semester quantitative and qualitative data will be collected to gather information to answer the research questions identified in the introduction. Data will be collected from multiple sources, using a range of methods to develop a detailed understanding of the students' experience of participating and learning in an authentic blended learning environment.

Conclusion

In summary, this research will provide an authentic blended learning environment to enable a 'real-life' experience for higher education students enrolled in a third year undergraduate unit. The blended nature of this unit enables students to participate in a variety of modes, as they desire, providing flexibility about when and how they learn. This blended environment was used in conjunction with authentic assessments which provide students with experience of real-life tasks. The blended authentic nature of the learning environment enables learning that is flexible, interactive, engaging and student-centered.

These principles are aimed at supporting students' transition to the workplace. However, it is accepted that this approach will be new to many students. In particular international students, who often have a history of education based on traditional teacher-centered classrooms. The research findings should provide an interesting insight into the viability of using a blended authentic learning environment for a diverse student cohort.

This research represents the initial phases of the design research study and subsequent phases are in progress. Findings from the first iteration of the unit will provide recommendations for improvement for future iterations of the unit. Ultimately the aim is to develop a model of authentic blended learning that will improve higher education students' transition to the workplace.

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Appendix 1 - Elements of authentic learning and evidence of how they have been applied to the unit

#	Elements	Guiding Questions	Evidence in unit
1	Provide authentic contexts that reflect the way knowledge will be used in real life	• What knowledge skills and attitudes will students ideally have after completing the course? • Where and how would students apply this knowledge in real life? • What context might be possible and appropriate in an e-learning course to enable students to learn the knowledge, skills and attitudes of the course? (Herrington, et al., 2010, p. 19)	All tasks for this unit are based on an authentic workplace scenario. ASK Learning solutions is a dedicated training organisation where employees are required to analyse, design, develop, implement and evaluate a training program to address a specific organisational training need.
2	Provide authentic tasks	• What kinds of activities are conducted in the real world that use the knowledge, skills and attitudes that are the focus of the course? • How is this knowledge applied to answer real-world questions and solve real-world problems? (Herrington, et al., 2010, p. 22)	Workplace trainers are required to analyse, design, develop, implement and evaluate training programs to address a range of organisational needs.
3	Provide access to expert performances and the modelling of processes	• How can the course environment provide access to expert or professional knowledge, skills and attitudes in real-world problem solving? (Herrington, et al., 2010, p. 23)	The course environment includes examples of real-world training programs created for a range of industries to demonstrate the process for developing a training program and how it may be published. It also includes links to example e-portfolios created by the lecturers to model the process of creating an e-portfolio.
4	Provide multiple roles and perspectives	• How can the course environment provide access to multiple perspectives • How can the course environment provide access to multiple examinations of the situation and problems? (Herrington, et al., 2010, p. 26)	The course environment provides links to web sites, articles, videos and blogs created by training professionals, example e-portfolios created by the lecturers and example training plans developed by students who completed this unit in previous years.
5	Support collaborative learning	• How would people communicate and collaborate on a common task in the real-world? (Herrington, et al., 2010, p. 26)	The might meet face-to-face, hold telephone discussions, email information and documents or use new technologies such as Wikis, Skype, virtual meeting rooms and other collaboration tools.
6	Promote reflection to enable abstractions to be formed	• How would people report their experiences in the real-world? (Herrington, et al., 2010, p. 30)	Informal discussions with peers, formal reports to supervisor or managers. Evaluation and review processes.
7	Promote articulation to enable tacit knowledge to be made explicit	• How would people publicly present and defend their position in the real-world? (Herrington, et al., 2010, p. 32)	They would present their training program proposal to management and/or other stakeholders to obtain approval to implement the training program
8	Provide coaching and scaffolding by the teacher at critical times	• How would people be supported in the real-world? • What level of scaffolding is required to enable the students to complete the task? (Herrington, et al., 2010, p. 35)	Training staff would be supported by supervisor and managers in their own workplace. They might join a professional training organisation (eg: TADA) to network and exchange ideas with their peers.
9	Provide for authentic assessment of learning within the tasks	• What workplace products would be created as a result of performing this task in the real-world? (Herrington, et al., 2010, p. 39)	Analyse, design & develop = A training program manual that would contain the training proposal to justify why they selected the particular training solution. An overall training plan, a training schedule. training module outlines, detailed training session plans, evaluation instruments and all required training & assessment materials (eg: handouts, case studies, PowerPoint slides, assessment tasks etc) Implement & evaluate = completed assessment documents, student evaluations, self-evaluation reports of training delivery performance & recommendations for future improvements.

Based on Herrington et al's elements of authentic learning. (2010, pp. 18- 39).

Appendix 2 - Elements of authentic tasks and evidence of how they apply to the unit tasks

#	Elements	Explanation	Evidence in unit tasks
1	Real world relevance	Activities match a nearly as possible the real-world tasks of professionals in practice rather than decontextualised or classroom based tasks. (Herrington, et al., 2010, p. 46)	Task 1 – potential new workplace trainers are required to demonstrate a sound understanding of learning theories and be able to justify the importance of learning and development within an organisation. Task 2 & 3 - workplace trainers are required to analyse, design, develop, implement and evaluate training sessions and training programs to address a range of organisational needs.
2	Ill-defined	Problems inherent in the activities are ill-defined and open to multiple interpretations rather than easily solved by the application of existing algorithms. (Herrington, et al., 2010, p. 46)	Task 1 – students were offered a range of e-portfolio tools to select from and decided what content to include, and how they would present their information. Task 2 & 3 – Students selected a training session and training program from a list of options and were then required to develop plans, schedules, and resources to enable them to effectively deliver and evaluate their training.
3	Complex tasks investigated over a sustained period of time	Activities are completed in days, weeks and months rather than minutes or hours, requiring significant investment of time and intellectual resources. (Herrington, et al., 2010, p. 46)	Tasks are completed over a 13 week semester. Task 1 due week 4, Task 2 due week 8 and Task 3 due either week 12 or 13 (2 weeks of training delivery).
4	Multiple perspectives / variety of resources	The task affords learners the opportunity to examine the problem from a variety of theoretical and practical perspectives, rather than a single perspective that learners must imitate to be successful. (Herrington, et al., 2010, p. 47)	The course web site includes links to web sites, articles, videos and blogs created by training professionals, example e-portfolios created by the lecturers and example training programs developed by previous students and the lecturers for a range of industries to demonstrate the process for developing a training program and how it could be presented.
5	Opportunity to collaborate	Collaboration is integral to the task, both within the course and the real world, rather than achievable by an individual learner. (Herrington, et al., 2010, p. 47)	Task 2 required students to work with a peer to evaluate each others training session and provide feedback (minimal collaboration). Task 3 required students to work in pairs or groups of three to develop an entire training program. Links to a range of online communication and collaboration tools such as; Skype (chat & file sharing), Google Docs (wiki), Diigo (social bookmarking for resources) and virtual meeting rooms (for online training delivery) were provided on the course web site.
6	Opportunity to reflect	Tasks need to enable learners to make choices and reflect on their learning both individually and socially. (Herrington, et al., 2010, p. 47)	All tasks required students to make choices and reflect on their individual learning. The discussion forums and Skype chat group enabled students to reflect and discuss their learning with their peers and lecturers.
7	Applied across different subject areas	Tasks encourage interdisciplinary perspectives and enable diverse roles and expertise rather than a single well-defined field or domain. (Herrington, et al., 2010, p. 47)	Tasks 2 & 3 provided the opportunity for students to apply their learning to a range of different fields and perform a diverse range of work place training roles.
8	Integrated with assessment	Assessment of tasks is seamlessly integrated with the major task in a manner that reflects real-world assessment, rather than separate artificial assessment removed from the nature of the task. (Herrington, et al., 2010, p. 47)	Tasks 1 and 2 contributed to student learning to enable them to complete task 3 which was the major task. Assessment was based on the work products created for each task, the e-portfolio they created to present their products and student blogs where students reflected on the learning tasks and their individual learning throughout the semester.
9	Create polished products valuable in own right	Activities culminate in the creation of a whole product rather than an exercise or sub-step in preparation for something else. (Herrington, et al., 2010, p. 48)	All tasks produced a range of products that contributed to the final e-portfolio submitted for task 3. The final e-portfolio product showcases students skills and knowledge in the field of workplace training and development and could be a valuable tool for students to gain employment in this field of work.
10	Allow competing solutions & diversity of outcome	Tasks allow a range and diversity of outcomes open to multiple solutions of an original nature, rather than a single correct response obtained by the application of rules and procedures. (Herrington, et al., 2010, p. 48)	All tasks provided the opportunity for students to display a diverse range of outcomes and solutions. Task 1 - Students selected the technology they wanted to create their e-portfolios, their own web design, and what information they wanted to include. Task 2 – students selected a training topic from a broad list of topics and planned what and how training they would deliver. Task 3 - students selected a training topic and identified the company they were designing the training for from a suggested list and then developed an entire training program using appropriate training approaches, methods and resources.

Based on Herrington et al's elements of authentic tasks. (2010, pp. 46 – 48).