

Satisfying real client requirements through student-centred courseware



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Abstract:

This paper outlines a rationale and course design strategy used for creating a course that was student-centred and focused on satisfying the needs of industry clients through project work. The pedagogical underpinnings of the course are based on authentic assessment, which is used to promote motivation and interest of students in a higher education institution. Students were given the opportunity in a multimedia development course to develop real E-commerce business solutions. This is the third evolutionary development of the unit. The design of the unit now reflects contemporary pedagogy, taking into consideration the needs of students and the changing requirements demanded by multimedia-centric e-business, as promoted by industry and government. The objectives were to develop a unit that was oriented towards authentic and student centred learning, as well as providing a motivating environment with a high level of interaction from professionals in industry.

Keywords: higher education, authentic environment, student-centred

Introduction

As reflected by Turban et al. (2000), the exponential increase of Internet usage is now demanding that businesses update their skills and re-engineer their products and services to meet new competitive demands in both local and global markets. This is supported by a study undertaken in Australia (Australian National Training Authority, 2000) determining that E-commerce will have a major impact on business structures and planning as follows:

E-commerce is expanding the scope of some occupations, and resulting in the creation of new occupations. E-commerce will result in the re-structuring of entire industries over the next decade, and in many cases will change the way business is conducted, particularly with the Internet-based supply chain (p. 3).

Training is needed to support these changes that require equipping a wide range of business operators and students entering the workforce with new skills in business planning and information literacy. However, these demands are raising critical issues for educators. What disciplines should offer these courses – computer science, multimedia, business, engineering, others? Graduating students need timely courses to bring them up-to-date with changes in technology and provide them with skills to manage electronic commerce, business practices and online marketing processes. Training and development courses also need to provide ongoing collaboration and mentoring with industry to ensure the knowledge acquired is current and relevant (Mitchell, 2000).

What teaching and learning strategies should be used to help motivate students learn about content “outside” their discipline area? In this study, multimedia development students were required to learn about business planning. Careful consideration needs to be given to developing learning activities that are motivating and student-centred. Students must be able to recognise the value gained by engaging with these activities, otherwise courses such as these can quickly become boring and tiresome for both the tutors and students.

This paper outlines a theoretical perspective for implementing teaching and learning strategies, and discusses the evolution of developing a course within this framework.

Student-Centred Learning Environments

Authentic activities are real contexts and situations that promote problem solving, higher order thinking skills and deep learning. They are real world tasks that provide students with opportunities to develop the knowledge and skills needed for specific contexts, even specific jobs and roles (Barab, Squire & Dueber, 2000).

Student Centred Learning Environments (SCLEs) provide a context that promotes learning in authentic environments, which engage students in problem solving, collaboration and deep learning. Hannafin & Land (1997, p. 168) explain that student-centred learning or learner-centred “...provide interactive, complimentary activities that enable individuals to address unique learning interests and needs, study multiple levels of complexity, and deepen understanding”. These environments are usually designed to enable collaboration, cooperation and promote individual effort to help develop a depth of understanding through the use of project-based learning, case-based learning, inquiry-based learning, problem-based learning.

These student centred environments (SCLEs) can be quite different in their design and structure but all provide opportunities for students to become immersed within a real, authentic learning context. These learning environments do not involve one standard solution, they challenge students to apply a variety of different learning strategies to work through the authentic activity to determine their socially negotiated solution to the problem (Land & Hannafin, 2000). They are described in the literature as ill-structured problems or tasks. Jonnassen (1997) explains that ill-structured problems are those encountered in practice and the solutions to these problems or tasks that are not totally predictable.

Jonassen (2000) describes the successful delivery of business concepts and skills for a third year business unit designed using student-centred learning environments. Students were expected to learn content that was immersed in the authentic activity. They did not teach all of the necessary prerequisite content but immersed and engaged students in the learning process

where they developed the skills and knowledge needed for these specific business skills needed in that course. The course lent itself to delivery via student-centred learning.

In the past tertiary educators relied upon traditional delivery of concepts such as business planning. Instructivist pedagogy relies upon the educator providing all of the necessary information for students to be able to complete well-structured activities can effectively immerse students in real world contexts. Case-studies, project-based learning can provide real opportunities for student to develop work place knowledge, skills, flexibility and ingenuity. Delivery of business concepts immersed in ill-structured tasks situated in a particular context provides students with opportunities to develop real work place, transferable knowledge and skills.

Students expect more from university courses than in the past. These expectations include developing real skills and knowledge that can help them gain employment related to the industry they are studying. They see the tertiary course that they are studying as the training and development they need to them to gain employment. Students also expect that what they actually learn at university reflects the actual practice in their field. The real world being the knowledge and skills gained at university reflects the expectations of employers and provides students with highly specific industry skills. Truly authentic activities enable students to gain the necessary employable attributes and the ability to transfer their learning to real world problems. Traditional pedagogy generally only provides students with isolated concepts delivered by didactic teaching practices. In traditional pedagogy, learning activities are not based on immersing the content into an authentic real world context, but relies upon direct delivery methods such as lectures to impart content knowledge, which is generally isolated from reality.

Even if courses are delivered via student-centred learning environments based on authentic contexts, the relevance of the activity to the student determines its authenticity. A tertiary educator, through their real world experience and knowledge may create learning activities that they believe are authentic and should be relevant to their students and their real world. It cannot be assumed that these activities are considered by students to be authentic.

Authenticity relies on learners' perceptions of the practicality of the learning environment they are immersed in and their perceived value of these activities relative to their goals and the real-world. Learner's perceptions of the real world are crucial in determining the relevance and therefore the authenticity of the learning task. Essentially, authenticity and relevance is determined by the student. Students will engage in tasks if they see them as specifically related to their needs and their employability. Engaging and stimulating student interest is the attractiveness and the motivational strength of authentic activities (Petraglia, 1998, Barab & Duffy, 2000, Barab, Squire and Dueber, 2000; Ireland, Tarricone & Luca, 2001).

Perreault (1999) contends that all students can be given authentic activities even if they are new to the content domain. They can be supported by effective scaffolding, by tutors and their peers at crucial times in their learning (Hogan & Pressley, 1997). Developing student's essential knowledge and skills can be promoted by using realistic examples. This enables them to become aware of realistic applications of new knowledge and skills (Ireland, Tarricone & Luca, 2001).

Project-based learning provides an environment that helps engage students in the process of designing and creating e-commerce business plans to meet client needs. This type of

environment would lend itself to cooperative and student-centred learning, enabling students to discuss, explore and test ideas/concepts supported by a team environment. Project-based learning environments are considered authentic in nature and provide a learning environment that stimulates and encourages students to construct their own knowledge and pursue their own interests resulting in the creation of realistic products (Moursand, 1998).

Using authentic activity such as project-based learning enables us to incorporate all of the essential components of an integrated, real life client focussed task, which is largely a student-centred activity.

Context & Background

The unit IMM 3329/4329 “Multimedia Business Solutions” is a final year, final semester unit taken by both under and post-graduate students in the Multimedia course at Edith Cowan University. These students are multimedia majors who are mainly interested in creating effective multimedia, as individuals and in cooperative and collaborative teams. Business and accounting concepts were generally not considered by students as part of the knowledge and skills they would need to find employment in multimedia. However, this unit is intended to develop student expertise and knowledge about E-commerce business planning, and how students can effectively use this knowledge to create more business centred web sites.

In September 1999, a group of ninety, second year multimedia degree students from Edith Cowan University completed a two-week intensive E-commerce business-planning course. They had no previous instruction in business planning and minimal understanding of E-commerce issues. Participants were required to develop an E-commerce business plan, which could be sustained economically by a business to sell products in an on-line environment. The course was subsidised by the Office of Information and Communications (OIC), which is part of the Department of Commerce of Trade, a Government department in Western Australia. Dow Digital (an E-commerce and on-line services consultancy and development company) developed the course and was subsidised to run it at Edith Cowan with a view of evaluating its effectiveness for university graduates in Australia, as well as how it could be implemented in third world countries. A questionnaire was designed to elicit student and industry views on the value of the course (Luca & McLoughlin, 2000). From feedback gained from this study, a number of conclusions were made:

- a two week intensive course was too short;
- the course is better suited to final year, final semester students;
- teams should be involved in developing more authentic business plans;
- team size should be no greater than four; and
- students needed more help on creating budgets using spreadsheets.

On the basis of this feedback, a full semester course was developed and implemented for final year, final semester multimedia students. At the end of this course students were interviewed and questionnaires given to all participants in an attempt to evaluate the course. There was unanimous agreement that the course provided information and ideas that would help them gain employment, and also generate ideas for their own businesses. The main criticism of course was focused on the lack of support for business-planning and accounting concepts coached in authentic or real activities. On the basis of this feedback, the course was modified to help reflect these considerations. The unit was again re-designed to reflect a project-based learning design that achieved a high level of motivation with a significant focus on the student-centred activities. This also contained authentic assessment strategies using real-life

projects and dynamic interaction with industry practitioners. There was a continual emphasis on feedback and evaluation to promote deep and meaningful learning.

Course Design Overview

In design learning activities for the unit a fundamental question was asked: “How and what types of learning activities do we create that will motivate students who are not really interested in business and accounting type concepts?”

Providing students with authentic activity that immerses them in designing e-commerce web sites and developing effective business plans within a project-based learning design was seen as a solution. Teaching students costing concepts and how to prepare a business plan were seen as the necessary scaffolding they would need to effectively immerse them in the project and to help them see the relevance of these concepts to the real world of e-commerce. Teaching of these concepts and skills, in the context of an authentic project would provide a real context to the concepts, which generally are taught using traditional didactic pedagogy. Students would then be able to see the relevance of these costing concepts and business planning, in meeting the needs of their real clients.

Based on these ideas, a new model was developed based on the following learning outcomes:

- understanding different e-business models (Kalakota & Robinson, 2001);
- exploiting e-business opportunities (Plant, 2000);
- nurturing the concept of entrepreneurial skill development of the student;
- developing an e-business plan (Napier, Judd, Rivers & Wagner, 2001);
- developing guidelines for an e-business start up (Napier, Judd, Rivers & Wagner, 2001);
- understanding management issues such as human resources, operating and capital costs of the business (Plant, 2000);
- identifying risk management and security issues in e-business (Kalakota & Robinson, 2001);
- understanding the importance of web design and the associated costs for e-business solutions (Buytendijk & Janowski, 2001); and
- integrating the web site “front end” to the enterprise “back end” planning eg, purchasing, invoicing, and credit and debit control issues (Napier, Judd, Rivers & Wagner, 2001).

These learning outcomes were incorporated within real world activities and an e-business planning focus. The delivery of the unit comprised of a number of different methods to promote authentic and student-centred learning as follows:

Lectures

Lectures included cases that provided exemplars of authentic e-business concepts and processes. A discussion session at the end of each lecture reviewed complex issues arising from these business cases, and how they were resolved. These weekly lectures also included guest speakers from industry who discussed their experiences of e-commerce development. These speakers provided information to students regarding real practice, which enabled students to apply this knowledge to their student-centred tasks.

Tutorials

Each weekly lecture was followed by a two-hour laboratory tutorial conducted by full time e-commerce professionals from industry. The laboratory tutorial exercises utilised real e-business examples selected to illustrate key concepts, and in particular the processes involved

with planning, commencing, and marketing a new e-business (Napier, Judd, Rivers & Wagner, 2001). Also, there were supplementary and optional case studies available to challenge and motivate the students.

Weekly Tasks

Each week students were required to complete two short real world tasks within the two-hour tutorial. Students were unaware of the topic prior to the session. Each topic reflected a real business problem, in which the students were required to determine solutions. These were collected, marked and returned to the students in the following week.

Project Teams

The students worked in project teams of four students to produce a business plan for a real client. They were assigned team roles, as reflected in an industry setting and were required to liaise with the client, collect content, brainstorm ideas for a e-business concept and develop a industry standard business plan reflecting best practice.

Presentation Night

Over two hundred people attended, including clients and many other industry representatives. Sponsors were selected to give prizes to three project teams with the best e-business plan. The Department of Commerce and Trade endorsed this event with a \$10,000 grant to promote the competition. There were fourteen teams selected for the final presentations from 35 teams, which consisted of cross faculty participation of 20 teams from Multimedia Business Solutions and 15 teams from Management Information Systems. This allowed students to compare business plans from different course perspectives, and reflect on how improvements could be made. All feedback collected from judges was compiled and given to all participants after the event.

Summary and Conclusions

A number of benefits emerged from running the unit in this fashion. At the end of the presentation night some students were offered employment by industry representatives. They were impressed with the level of professionalism, knowledge and skills displayed by students. The implemented student-centred learning environment led to a noticeable development of entrepreneurial skills and a real world awareness of industry requirements. Students enjoyed having industry tutors, and gained real world experience from their tutor's. The tutors were enthusiastic to continue their roles, as working and interacting with these students provided them with new ideas for their own e-business. Students found the student-centred learning environment (SCLE) challenging. However, most of the unit evaluations showed that students considered "this to be the best subject they had ever done". Students were motivated to succeed in this unit, as they could see the relevance and authenticity of the set tasks, and were developing valuable skills for the industry.

The move towards e-commerce, entertainment and education is spreading rapidly with a limited supply of skilled operators who understand the business and technological aspects of this new paradigm. Government, industry and educational institutions must work together to keep up with these changes and add value to tertiary courses, in which final year students will be motivated to achieve through authentic student-centred learning designs and assessment. In this course, we have adopted these principles to create authentic learning environments that meet the needs of students, industry, and government.

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