

Orienting Distance Learning Students Commencing the Bachelor of Construction Management Program: Designing an Online Module

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ABSTRACT

Literature has shown that orientation programs for commencing students play a significant role in preparing students for their university life. Usually, universities conduct on-campus orientations to welcome and introduce students to university life – including the academic, social, and recreational aspects of it. However, these do not assist students who commence or continue their studies via distance learning mode. Nowadays, online learning is becoming more and more popular, and is often combined with part-time work. Distance learning (DL) students' needs differ from those of on-campus students, and the generic orientation programs designed for on-campus students may not address their needs. Furthermore, DL students familiar with traditional face-to-face teaching environments require additional support when they enrol in an online and problem based learning program because they need to adjust their approaches to learning. This paper reports on the design of an Online Orientation Module for the Bachelor of Construction Management (BCM) program in the School of Architecture and Built Environment, University of Newcastle. This degree is offered through problem based – mixed mode delivery. The paper discusses the concept, content, technical design issues, and the operational delivery of the module.

KEYWORDS

orientation, Blackboard, distance learning, online learning

INTRODUCTION

The School of Architecture and Built Environment, in the University of Newcastle, offers the Bachelor of Construction Management (BCM) program via 'mixed mode delivery' based on Problem Based Learning (PBL) pedagogy (Williams, Sher and Brewer 2008). 'Mixed mode' is an approach that delivers programs simultaneously to on-campus and

distance learning students (Sher and Gajendran, 2008; Sher, Brewer, Gajendran and Williams, 2008). The distance-learning component is solely offered online. The flexibility of the online mode with the PBL approach has proven to be attractive to students. The appeal of the program is two-fold. Firstly, all commencing BCM students have the flexibility to work and study simultaneously (Williams, Sher and Simmons, 2009), as evidenced by the significant increase in enrolments in the years since the inception of the DL BCM degree. Secondly, any enrolled student has the flexibility to switch to between the learning modes during the course of their studies.

Although the structure of the program offers a significant level of flexibility, it became evident to staff that the students enrolled in the DL program (both commencing and those switching from the on-campus program) required considerably more assistance on non-course related matters than their on-campus counterparts. Moreover, the nature of assistance sought by the DL students relating to academic or course matters was different to that requested by on-campus students (supported by Stevens and Switzer, 2006). Help was requested in understanding aspects such as the course delivery approach, learning environment and use of technology (similar observations made in Wozniak et al, 2007). Their needs included clarification on overall pedagogy, work-study-family balance, administrative and university policy issues (similar observations made in Kanuka & Jugdev, 2006). Upon reflection, staff felt that the constant demand for their attention emanated from an overall lack of understanding on the part of DL students about their roles as learners (supported by Bergmann and Raleigh, 1998).

Anecdotal evidence suggested that DL students who had been enrolled for several years remained unaware of some of the basic facilities and support offered by the university. It was also apparent that students were deeply rooted in the learning approaches they were familiar with, and were not-attempting to change their behaviours. Staff considered that most of these issues could be addressed via a detailed briefing. However, with the geographic dispersion of commencing distance-learning students, the challenge was how and when to communicate the supporting information to students. The School of Architecture and Built Environment commissioned an online module, which was to be made available during commencement orientation, to address the challenges facing the DL student's transition to online university study. A development of this module was funded by a grant administered by the Centre for Teaching and Learning at the UoN. This paper reports on this initiative by presenting: an analysis of the problems inherent in orienting DL students, content requirement analysis/system options of an online orientation module, technical design and specification, and content design of the module.

INVESTIGATION OF THE CURRENT ENVIRONMENT

Our initial analyses of the profile of students entering the BCM program as well as of the current approach to on-campus orientation provided insights to the problem and indicated possible solutions. Although the age spectrum of students enrolling in BCM ranges from school leavers to mature age students, a significant proportion of the distance-learning students are mature aged. In 2010, 63 percent of students enrolled in the BCM were non-school entrants. A considerable number of students have prior learning experience (including TAFE qualification(s) or course(s) completed for other on-campus programs), which has influenced and informed their learning attitudes and behaviours.

Consequently many of these students are not familiar with learning online, PBL and self directed learning. As already mentioned, many of these students have studied before, and as a result miss out on a first year, first semester course that introduces them to such approaches. Furthermore, a significant proportion of the intake has not been exposed to studying at a distance or online before. For this reason, many students are ill-prepared for the challenges they face, including basic activities (such as communicating with their lecturers), every-day activities (such as sourcing materials from the library), and applying for 'special circumstances' (which they need to do if they cannot submit an assignment on time). On-campus students are briefed about these issues during orientation week and in lectures. However, DL students have, to date, remained unaware that they can access the numerous support services offered by the university and consequently do not capitalize on them. Many deal with issues in an ad-hoc manner through emails, discussion board postings and phone calls. These are demanding of staff time, and the repetitive nature of their questions in part prompted the development of this online orientation module. The review of literature shed some light into some alternative approaches designing online orientation modules (see McCain and Miller 2008; Wozniak et al. 2007; McVay 2000; Miller and Pope 2003; Scagonoli, 2001; Bozarth, Chapman, and LaMonica, 2004).

CONTENT REQUIREMENTS ANALYSIS

DL students' learning journey is complicated by the challenges faced in managing their time (work/study), commitments, and their lack of understanding of the problem based online learning environment used. Changing their entrenched attitudes to self regulation / learning style and their expectations further compound these challenges. Once all these challenges have been recognized, students still need to identify strategies that will assist them in achieving their desired learning outcomes. Their lack of exposure to university policies also poses challenges in terms of understanding esoteric terminology and processes. The online orientation module helps students respond to these challenges and

avoids frustration on their part. It also reduces the number of repetitive queries staff receives from DL students and should also reduce attrition resulting from poor decision making by students.

It became apparent that the most appropriate time to induct students to online learning is during their commencing semester. Changing their attitudes and equipping them with an awareness of the skills required for online learning should occur during the early stages of their learning. If this does not happen early in their academic careers, these become difficult to change.

Therefore, the school embarked on an initiative to design and deliver an online orientation module for DL students. The existing on-campus orientation materials were pooled together to identify deficiencies relating to orienting DL students. New materials were developed to bridge the gaps identified. The module was developed with an appropriate blend of new and existing materials to suit the needs of DL students.

PEDAGOGICAL AND MODULE ORGANISATION REQUIREMENTS

Designing the nature and form of a module that is attractive and engaging for students was challenging. The brainstorming sessions held by the development team included aspects such as what content to incorporate, how to disseminate it, and how to gauge students' understanding of concepts. Five pedagogical requirements were identified and they are presented below. These requirements are coded P-1 to P-5 to ease cross-referencing to subsequent sections.

- P-1. The module needed to be designed to introduce concepts at a pace that students could digest. Clustering concepts into themes and introducing similar aspects of university life increased the accessibility of the materials. For example orienting students to aspects Problem Based Learning (PBL) was presented as one theme or unit. However, PBL is better contextualized within the themes of 'Managing expectations' and the 'Learning Environment'. Highlighting students' commitments to engage with PBL can assist them in managing their expectations. Moreover, students' understanding of their academic goals and an evaluation of their study, work, family and social responsibilities can help them to make realistic commitments. Similarly, information on how to approach a PBL course, in terms of facilitation and assessment was pooled under the 'Learning Environment' unit. The organisation of the units within the module was designed to assist a linear and logical learning progression. This enables students to deal with one clear learning concept at a time.
- P-2. Acknowledging that assessment drives learning (Biggs, 1999), a formative assessment tool was incorporated at the end of each unit to consolidate students'

understanding. This was designed in a hierarchical manner, with units containing sub-units. Successful completion of a quiz acts as a gateway to subsequent units.

- P-3. Strategy is to release on-line units once students had attempted the quiz. This will provide a basis for students to interact with the material in a module.
- P-4. The module content should be delivered in different multi-media formats. Choosing the most appropriate form of content delivery – e.g. Text (including interactive text), Audio, and Video (including animations) is critical for engaging students (see the Technical Requirement sections for more details on this).
- P-5. The navigation of content should be easy. Therefore, the screen designs suited the limited screen size of laptops to avoid significant scrolling.

THE TECHNICAL DESIGN

The orientation module was developed through an innovative approach of the University of Newcastle's virtual learning environment, Blackboard. This approach relied heavily on a combination of Blackboard's assessment and content management tools to facilitate the pedagogical design discussed previously. The strategic use of Blackboard in concert with an external content presentation service (Scribd¹) produced an effective resource that is specifically aligned to the needs of commencing students new to online learning. Moreover, this approach ensured the initiative's sustainability beyond the initial development phase.

For many students, the orientation module would be their first exposure to (a) university study and (b) learning using an online learning environment such as Blackboard. In order to provide students with an effective and supportive experience, the majority of the module content was delivered using Blackboard 'Learning Units' which control the manner in which students navigate web pages. This feature enables students to progress step-by-step through each unit in the same way they would engage with a physical book (requirement P-1). This approach also enabled staff to present content in smaller, discrete learning experiences (requirement P-5). Also, the Blackboard pages have been tested using a variety of internet browsers.

To further accommodate the needs of commencing students and reduce information overload, each of the six units is released progressively using Blackboard's Adaptive Release rules. When students first enter the module they are provided with access to the Introduction module. On completion of a unit, students are presented with a quiz (requirement P-2), which they need to attempt (requirement P-3) before they are allowed to progress further. Students have to demonstrate mastery of the content of a unit before

¹ Scribd is the world's largest social reading and publishing company (see <http://www.scribd.com/>)

progressing to the next unit. For example, they need to master the content related to managing expectations before they can progress to the learning environment unit.

In recent years, videos and animations have enriched web interaction and learning due to their dynamic capabilities. Their ability to convey a message through movement differs from the monotony of text and imagery and consequently the mixed media approach we have adopted makes the content more interesting and engaging. Videos in particular, add a personal tone to interviews and messages, and animations can simplify and add element of fun to interactions, resulting in more enjoyable learning experience. However, the module was design to be accessible by students, with medium performance computers. The minimum specification for computers to access the module was stipulated.

TECHNICAL ISSUES

Standard specifications for all web-based media were considered for a versatile technical design. The specifications applied ensured that the content was accessible to low technology setups and considered Internet connection speeds, download quotas and browser compatibility. The framed HTML nature of the Blackboard environment as well as having to accommodate the minimum screen sizes of small laptops were factors that influenced the visual sizes of media we adopted. All media were embedded within HTML code to reduce the likelihood of materials being illegally copied and distributed.

Considering all the above, three technical specifications were stipulated as presented below. These specifications are coded T-1 to T-3 to allow cross-referencing to subsequent sections.

- T-1. Images & Text – Embedded into Scribd document. Raster images as JPEG format, Vector images saved as jpeg. Scribd document layout designed in Microsoft Word with its size not to exceed 1024 px x 350 px.
- T-2. Animation – Adobe Flash (SWF) embedded into HTML at 15 frames per second.
- T-3. Video – 640px x 360px, Flash Video Format (FLV) streamed from a server and played through an embedded FLV Player. Video compression not to exceed 2Mb/minute of video.

MODULE CONTENT AND STRUCTURE

The aim of the orientation content is to prepare students for their online learning studies. Before the first learning unit starts, there is an introduction explaining the software requirements and how to navigate through the module. The module has been designed by clustering essential orientation information into discrete units. All units start with an animation as an introduction. Based on the requirements analysis described above, six

key areas of content were identified: Introduction, Getting Started, Learning Environment, Learning Support, Policy @ Newcastle and Social Environment and Feedback.

Learning unit 1 – introduction

This unit includes a welcome message by key university people (academics and administrators) and introduces students to various aspects of their university life. The use of video recordings personalizes the introduction of staff and engages the students. This unit provides distance-learning students with similar information to on-campus students about key university roles. Messages from the Head of Discipline, Pro-Vice Chancellor, Head of School, Program Convener, Assistant Registrar (Academic), and School Executive Officer are included in the unit.

Learning unit 2 – getting started

This unit is focused on managing the expectations of students. It provides information and strategies to help them organize and manage their work-study-family-social demands to avoid them developing unrealistic expectations. Students often struggle to manage their studies. Explaining how important time management and planning is might help, as many students do not appreciate the time required to review materials online, engage in tutorials, and complete the various assignments required of them. This unit also exposes students to the university's expectations. Completing this unit alerts students to the need to manage their workload, and might influence some to study fewer subjects. Distance learning requires considerable online activity, and familiarity with a diverse range of software assists students markedly. Therefore, this unit also assesses students' computer literacy skills and highlights the skills they may need to develop to engage in online studies.

Learning unit 3 – learning environment

The BCM program is delivered in mixed mode. Commencing students who are not familiar with the teaching and learning environment often struggle to get started with their studies. This unit informs students about online learning strategies that support their learning. It also provides information that assists them to adapt to Problem Based Learning. It presents the terminologies, procedures and strategies associated with the BCM program's mode of delivery. The unit starts with a description of the learning environment, followed by five videos explaining different aspects of the learning environment.

Learning unit 4 – learning support

This unit provides information that helps students enhance their learning. It refers them to the resources provided by the university through the Teaching & Learning Centre. An introduction to the library resources available for DL students is presented through a video clip. Another video clip shows the Student Academic Conduct Officer (the academic responsible for dealing with cases of alleged plagiarism). This helps students familiarize themselves with key academic integrity issues underpinning their studies.

Learning unit 5 – policy @ Newcastle

Some students do not have a clear understanding on how university policies impact on their university life. This unit exposes them to the key policies that provide a legislative framework that supports them through their studies. Most students are overwhelmed by the university's policy maze. This unit targets selected policies including applications for credit, enrolling/withdrawing from a course, academic integrity, complaints, appeals against final results, and special circumstances.

Learning unit 6 – social environment and feedback

This unit introduces students to all teaching staff and the on-line student guidance mentor (Williams 2009). It also provides ways for students to meet and engage other distance learners in matters of interest. Finally, it invites feedback on the orientation module. At the end, students are provided with a downloadable list of important contacts as well as links to teaching and learning support facilities offered by the University of Newcastle.

VISUAL DESIGN OF THE MODULE IN THE CONTEXT OF PEDAGOGICAL AND TECHNICAL REQUIREMENTS

Images of selected screen shots from the Online Orientation Module are presented below to illustrate the range of different technical and pedagogical requirements. They also illustrate how the module provides an engaging environment by including a variety of digital formats. All screen shots were taken from a 15" lap top screen, and this demonstrates how the visual design enables easy navigation on small screens (Requirement P-5).

Figure 1 illustrates how similar themed contexts were pooled into learning units and how the sub-structure within the learning units were organised into logical sequences. This provides an example of how P-1 and P-2 were integrated within the Blackboard environment.

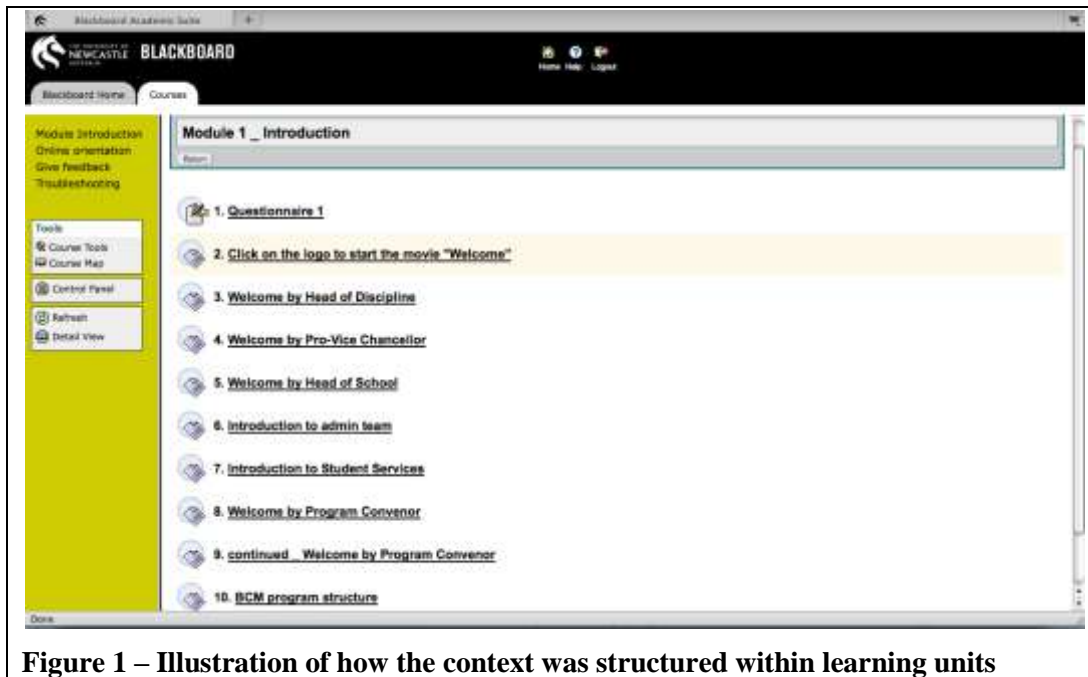


Figure 1 – Illustration of how the context was structured within learning units

Figure 2 illustrates how a Blackboard quiz was used to assess students’ understanding of the content relating to the learning environment. Completion of the quiz was used to trigger the adaptive release of the succeeding learning unit. This screen illustrates how P-2 and P-3 were delivered in the design of the online orientation module.

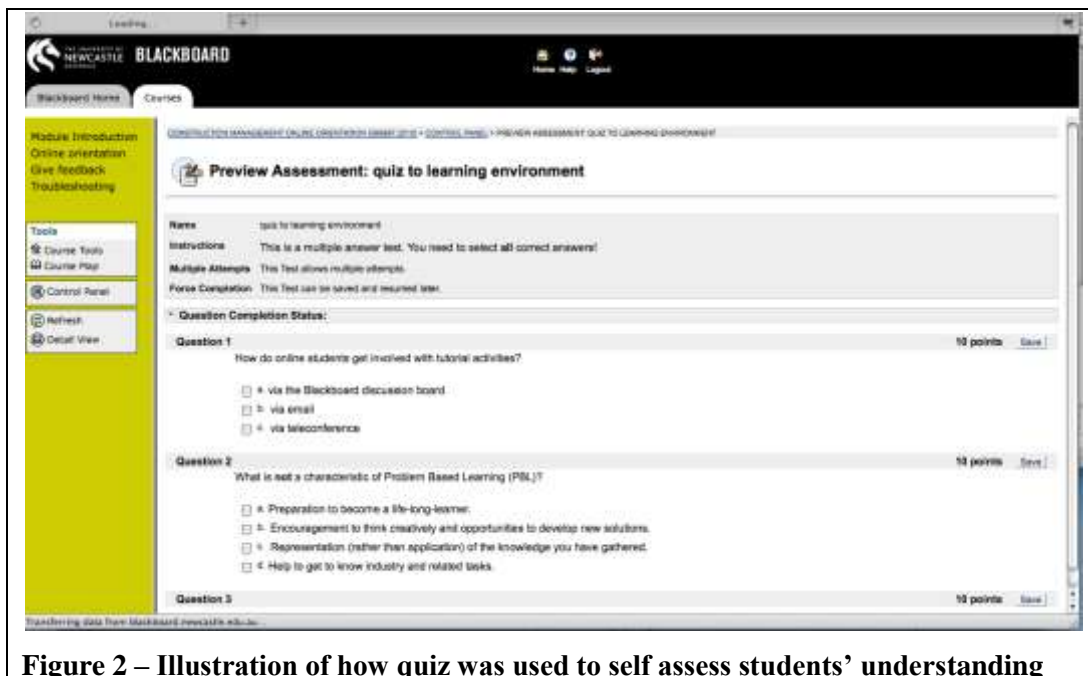


Figure 2 – Illustration of how quiz was used to self assess students’ understanding

Integrating Scribd within Blackboard for easy navigation of content is illustrated in Figure 3. This example shows how T-1, P-4 and P-5 were integrated in Blackboard. The Scribd documents allow pages to be turned over on screen.

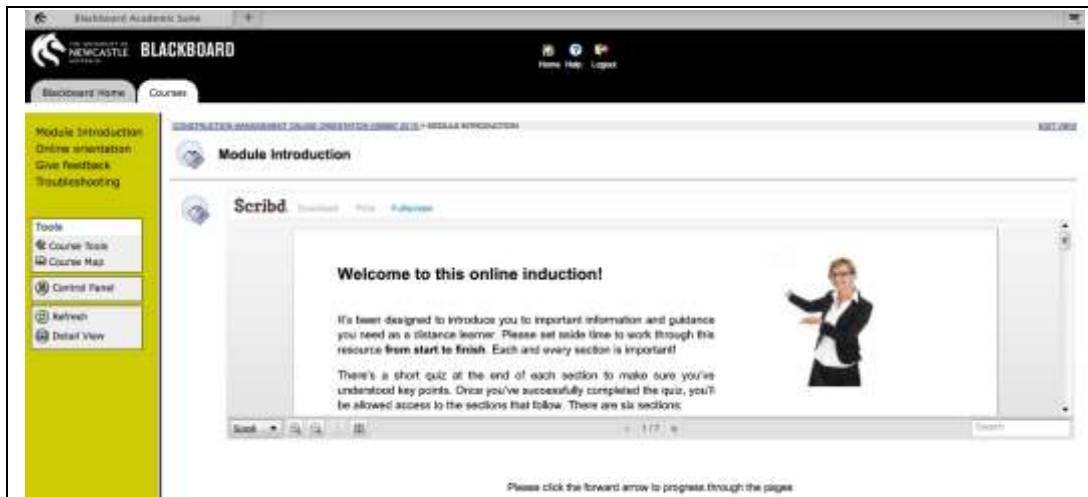


Figure 3 – Illustration of how Scribd documents were used to present text within BB

How animations were utilized in Blackboard and used as an introduction to each learning unit is illustrated in Figure 4. This shows how T-2, P-1 and P-4 were integrated within Blackboard.

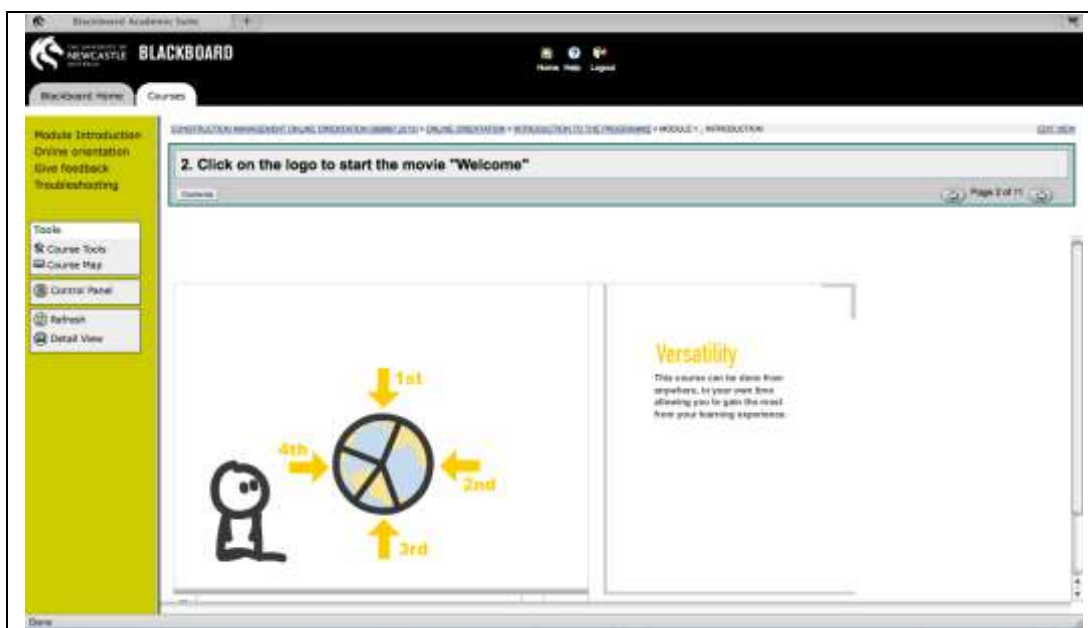


Figure 4 – Illustration of how animations were used to introduce each learning unit

Figure 5 illustrates how videos produced in house were integrated into Blackboard. A number of video clips were used in the online module to deliver key messages. This illustrates how T-3, P-1 and P-4 were integrated within Blackboard.

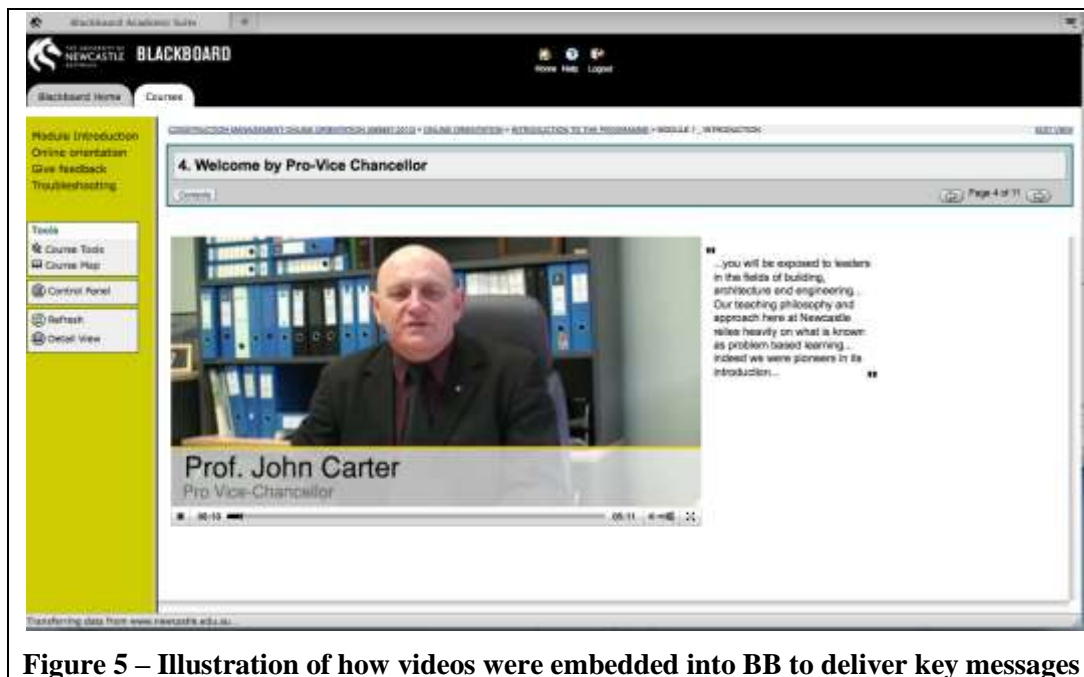


Figure 5 – Illustration of how videos were embedded into BB to deliver key messages

CONCLUSIONS

Effective transition of commencing students to the university environment is critical to retaining them and maintaining their satisfaction. Universities channel significant effort into designing and delivering orientation programs for on-campus students but these are largely inaccessible to DL students. Designing a university wide orientation program that addresses the concerns of all on-campus as well as DL students is a challenge. DL students miss out on critical information and assistance that may transform their approach to university life. This paper reports on the design of an online orientation program, developed to orient DL students in the BCM at UoN. The requirements analysis identified five pedagogical requirements and three technical requirements. The design of the module fulfilled all the requirements. The content was clustered into six learning units and was delivered via multiple formats, including multi media. Quizzes were used to test students understanding of key concepts impacting their university life.

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