

Pragmatic approach to learning materials

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An important yardstick by which any innovation may be judged is that of uptake by users. In the context of teaching and learning, innovative approaches do not necessarily need to involve a high level of technology. Indeed, there are robust arguments that support the use of tried and tested approaches and tools that are used in novel ways. Staff hesitancy to innovate may be alleviated if they do not need to be continually retrained (e.g. in the use of new software). An approach that is being adopted successfully at The University of Newcastle is the use of a customised Microsoft Word template as a course-authoring environment, which is distributed to students as PDF files via Blackboard or CD. This paper explores the challenges presented by this approach and contrasts these with the benefits that accrue. It provides evaluation of stage one of the University of Newcastle's Course Template pilot project, and discussion of the current work in progress on stage two of the project.

Keywords: templates, innovative teaching and learning approaches, learning design, case-studies, problem-based learning

Background

The University of Newcastle's Centre for Teaching and Learning is required to adapt to change swiftly, to be able to think innovatively with limited resources, and to meet clients' needs in a timely fashion. These demands are not unique to our centre, but are part of a wider current climate within higher education. We have seen a gradual move away from the development of time-consuming, resource-intensive, large-scale multi-media productions for individual academics, towards the development of small-scale generic reusable tools and templates for the wider university community. The current challenge is how best to:

- serve an academic population that is under considerable pressure to prove and improve the quality of Australian higher education (Stevens, 2005)
- cater to an increased focus on students' experiences and satisfaction at university (Scott, 2006), and
- deliver a worthy product.

The *UoN Course Template* has been developed specifically for academics designing individual courses ('course' is the nomenclature used at The University of Newcastle for a 'subject'). The template is flexible enough to be used for courses that echo the problem-based learning and case-based learning philosophies for which some schools at The University of Newcastle are renowned. The template has been designed to assist academics to rethink their course design and to move away from content-driven courses (Gibbs & Gosper, 2006); instead focusing on *learning tasks* and the *resources* students need to complete those tasks.

The subject of this paper came about in response to a number of requests by academics for a robust online template that requires no specialist software knowledge and minimal administrative support.

What is the UoN Course Template and what makes it special?

The *UoN Course Template* is a collection of MS Word documents that are linked together through a 'distribution system' to deliver scenarios to students via a CD, Learning Management System or the Internet.

Creating a template using MS Word is not a new concept. Many educational institutions delivering distance-learning materials have used MS Word templates for paper-based materials for some time. The idea of using a MS Word template in an online and interactive way is a more recent notion, and perhaps seen by many as a retrograde step, since website software such as Dreamweaver or desktop publishing software such as PageMaker or InDesign tend to be more obvious choices. The reason for choosing MS Word over other software programs was a pragmatic one: most academic staff have at least a basic understanding of this software, and most computers (both PC and Mac) have it installed for everyday tasks.

Our intention was to provide a template that was not resource intensive and that could be used with minimal induction and maintenance. We aim to enable academic staff to present professionally presented online material in a relatively short timeframe without a large initial investment of resources. There is much current debate about who should be responsible for the production of learning materials. Should it be the role of multi-media professionals or should academics do it themselves (Manto, 2006)? The authors of this paper join the debate in regard to acknowledging the fact that in the present knowledge economy, where much information is rapidly changing, simple solutions to updating online course materials expediently are sought by academics. The purpose of the *UoN Course Template* is to provide academics with a robust tool to achieve their task of course design without overwhelming the course development process unnecessarily.

The UoN course template design

Unlike a typical MS Word template, the *UoN Course Template* [<http://www.newcastle.edu.au/service/teaching-learning/projects/templates/index.html>] is in fact six separate templates. Two of the templates, 'Main menu' and 'Getting started and Help' require minimal modification, whilst the remaining four templates provide for users to add content and modify it accordingly, as outlined in Figure 1.

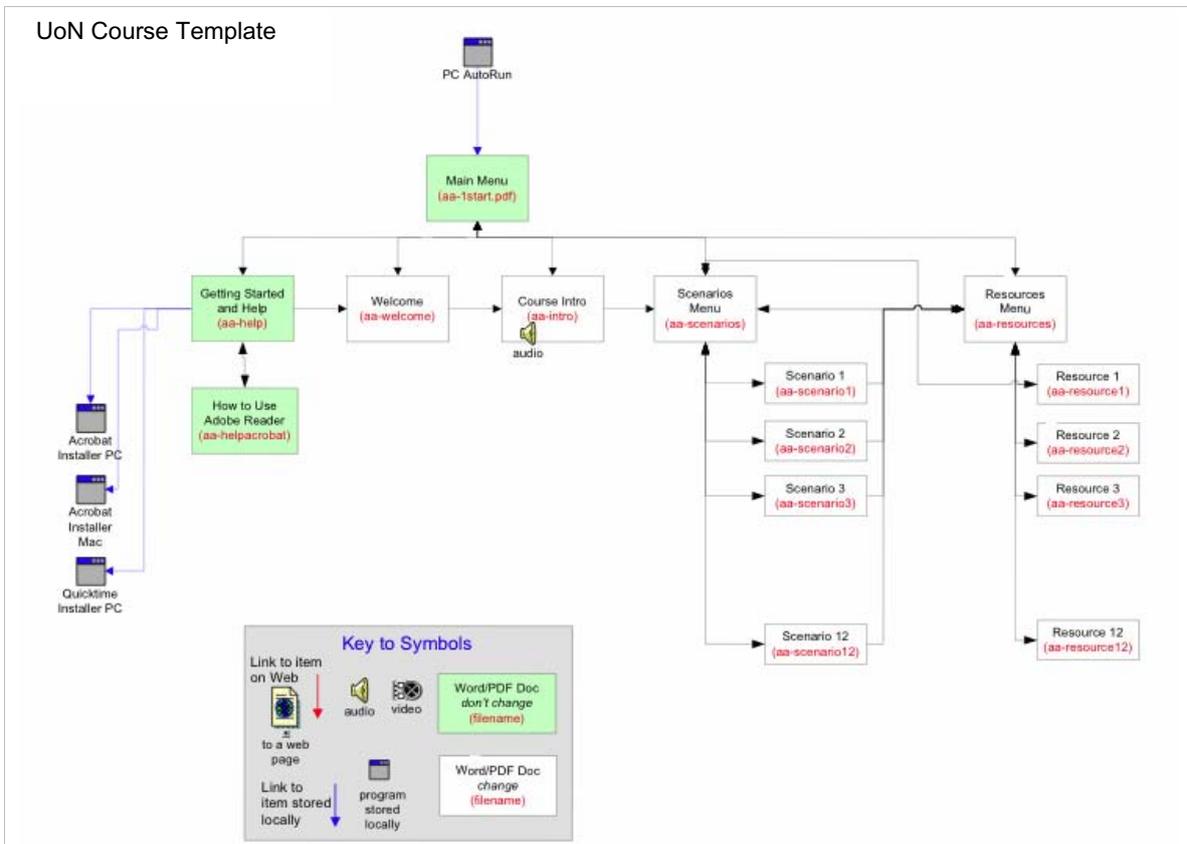


Figure 1: Interactivity flowchart

These templates provide the user with a toolbar menu of macro buttons to simplify the document formatting process.



Figure 2: UoN course template toolbar

The template provides opportunities to insert a range of media, such as audio files, video clips and digital photographs, as well as the ability to hyperlink existing PDF files and relevant websites. Eleven engaging icons were designed to represent a wide array of learning tasks ranging from activities and case studies to web links.

Once users have modified the template MS Word files, each file is converted to PDF format using the conversion software Adobe Acrobat (this software is needed to convert the MS Word files). The group of PDF files are then distributed to students either through a LMS such as Blackboard, or via the Internet or CD. All of the templates are hyperlinked to the Main Menu and students navigate through these hyperlinks or the PDF reader navigation. Students need access to PDF reader software and to the Internet (depending on context) to access the materials.

Pilot project phase one

In the preliminary stages of the *UoN Course Template* project we encountered resistance from a number of our peers about the use of MS Word. In light of this perceived resistance the focus of the first stage of the evaluation of the template was on the end users: students at The University of Newcastle. We adopted the stance, supported by current research (Holland & Pithers, 2005; Scott, 2006), that interactive online material does not need to have all the ‘bells and whistles’ to enhance learning. Holland & Pithers (2005) and Scott (2006) noted that students were primarily interested in well-organised, contextualised and relevant learning activities and assessment tasks. The *UoN Course Template* was designed as one of the steps to support academics to achieve this outcome.

Construction ecology 1

This section describes the use of the *UoN Course Template* in a course entitled ‘Construction Ecology 1’ by staff in the School of Architecture and Built Environment at the University of Newcastle, Australia. The School comprises three disciplines: Architecture, Construction Management and Industrial Design. A reorganisation and redevelopment of courses has recently occurred, with discipline-centred delivery of similar material being replaced by delivery to combined cohorts of students. An added dimension to these developments is a move to incorporate distance learning Construction Management students with on-campus students in mixed-mode delivery from Semester One, 2007.

The Construction Ecology 1 course is delivered to a joint first year cohort of Architecture and Construction Management students, as well as to a small number of students from other disciplines who select the course as their elective. The introductory nature of the course is reflected in the objectives it seeks to deliver; i.e. students are able to:

- employ appropriate terminology to describe materials and their properties
- define materials properties and their design considerations
- describe the influence atomic bonding systems have on materials properties
- use appropriate classification systems for categorising materials utilised in construction
- acknowledge the environmental implications of materials and their manufacture
- make informed decisions on the application of materials to defined design situations
- identify a range of commonly used construction materials and describe the rationale for their application
- describe the manufacturing processes which provide the predominant construction materials
- describe the impact of utilising multiple materials in combination.

The course adopts elements of problem-based learning. Students are provided with a number of ‘real-life’ scenarios and are required to recommend construction materials suitable for the different conditions / purposes inherent in each scenario. They work in tutorial groups to identify the requirements of each scenario and criteria by which materials may be evaluated. Each student then prepares a portfolio that documents their rationale in recommending certain materials, and sets out the properties of those materials.

In preparation for the move to mixed-mode delivery in 2007, a prime objective for development of the course was that the adopted approach should simultaneously accommodate on-campus as well as off-campus delivery. In light of the large file size of the resources provided, and recognising that some students have only poor Internet access speeds available at home (whilst some work on construction sites with none at all), it was decided to make the material available to students on CD. The students still needed Internet access for a number of hyperlinks to read relevant information, but not for downloading large amounts of material.

Method of student evaluation

Sample

The 106 students studying the Construction Ecology 1 course received an online course evaluation questionnaire. This group of first year undergraduates is a diverse group in age where some are straight from high school (late teens) whilst others have come through the TAFE system and are working in their field (21–35+). The majority of the cohort are male.

Instrument and procedure

The questionnaire comprised 35 questions, covering eight topic areas. The topics included course content, course design and course assessment, as well as the course template design and accessibility, and technology access. Ten of the 35 questions dealt specifically with the *UoN Course Template*. The present authors created the questionnaire by examining a number of examples found in relevant research publications and by conferring with peers on exemplar models. 85 responses were received out of the class of 106 (a response rate of 80%).

Results

The following are some of the key points raised:

- 86% of students agreed or strongly agreed with the statement “Using the CD [via the *UoN Course Template*] was a good way for me to access the course content”
- 84% of students agreed or strongly agreed with the statement “The CD was easy to open and use”
- 81% of students agreed or strongly agreed with the statement “The instructions provided were easy to read and were useful”
- 56% of students agreed or strongly agreed with the statement “It was easy to move from page-to-page and link-to-link”, whilst 20% disagreed or strongly disagreed (8% were unanswered, 16 % were neutral)
- 79% of students agreed or strongly agreed with the statement “The hyperlinks helped me engage actively with the course material”
- 79% of students agreed or strongly agreed with the statement “The navigation links were self-explanatory and easy to use”
- The majority of students accessed the CD at home (79%), whilst only 14% used it at University (7% of students didn’t answer this question)
- 80% of students did not experience any technical problems using the CD, whilst 8% said they experienced problems ‘sometimes’ and 5% had experienced problems (7% of students didn’t answer this question).

Students also provided detailed responses in answer to various questions. When asked to identify what was most valuable about the course, ten students specifically identified the CD, and several others made

reference to it by implication. For example, one student stated that "Lecture notes accompanied by CD and BlackBoard notes provided good information... these sources helped in finding information, as well as incorporating material properties into achieving a desired outcome."

Discussion

Students were overwhelmingly positive about the CD and template (and the problem-based approach the course adopted). They found it easy to use, convenient and relevant. Few experienced technical problems. One aspect does warrant further development: that of navigation between hyper-linked PDF documents. This will be addressed in future versions of the UoN Course Template.

One of the unintended outcomes of the creation of the template has been the opportunity to provide academics with professional development opportunities about learning design and to provide models that benchmark learning design, as well as to address some specific flexible learning quality issues such as consistency and quality course design as outlined in the Carrick report *Promoting and Advancing Learning and Teaching in Higher Education: The Messages from the AUQA Report*. Through our induction workshops a number of issues arose which demonstrated that more models of good learning design needed to be made available to academics. The *UoN Course Template* induction manual will provide such models and will direct staff to good practice through a number of useful websites (AUTC 2001) and documented research in this area (Brown, 2006). There will be further professional development on course design for multiple modes of delivery using the *UoN Course Template* which will look further at primary users of the template and how the template can support them in rethinking learning through the use of the *UoN Course Template*.

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