ICT subject specific online resource: Final Report.
Making use of alternatives to traditional teaching methods within ICT and design.

Project led by Glenn Longden-Thurgood
With James McAdam, Caine Crawford.

Introduction

The online ICT resource was developed in response to increasing numbers of students within the School of Architecture, which has led to a decrease in student/tutor contact time. It has built on the teaching developed over the past three years for the Architecture and Interior Architecture and Urban Design programmes.

It has been funded in part by the Centre for Excellence in Teaching and Learning through Design (CETLD), elaborating on its learning spaces theme. The virtual learning resource allows a medium for student/tutor interaction as well as peer to peer learning.

We recognise that students learn in different ways and we make use of the resource to deliver material that allows the students to develop individual learning mechanisms whilst being fully supported by the teaching and technical staff.

Timescale

The resource was created prior to the 2008-2009 academic year and updated at the end of each semester. The students are assessed through specific submissions at level 1 and 2, the brief for this submission is set by the ICT tutors but is linked directly to the taught curriculum, as supported by the online resource.

The online resource

The aim of the online resource is to produce high-resolution video tutorials that relate directly to the teaching methodologies and practice of a spatial design school. High resolution videos mean that menu text may be easily read within the video and subtle changes in the cursor format and colour can translate to the viewer.

Material found on the web is often low resolution, making the tutorial hard to follow and understand. It is often directed at fields other than design, photography for instance, and deals with aspects of the software that are used rarely, if at all, by spatial design students who produce drawings in a very particular way and for a particular result.

Most of the exercises we have used in the classroom for the past two years have been uploaded onto the online resource to give students a chance to work at their own pace, and on their own computers. The exercises are presented in the same framework as the ICT teaching which is delivered in response to the design curriculum to aid the production of drawings suitable for submission and use in reviews.

The videos are available in a series of zipped files which can be downloaded via the students e-learning centre, Studentcentral. When uncompressed the user can open individual video tutorials and either repeat the taught sessions or revisit specific sections of the material. These exercises differ from other tutorial material available online and in books, in that they are specifically designed for architectural design students.

The resource can be used to view teaching exercises as a whole, and also in part. Students can download a 20 minute tutorial, or a 3 minute specific command instruction.

The balance of video and text led material, of both short and long exercises, and the mix of visual and auditory delivery, ensures that students can find a working methodology that is right for them.

The Project

During August of 2008 a number of videos were created on both the PC and Mac platforms by the project team, they were then assessed as delivering:

- Appropriate resolution video material that could allow students to view the complex software at an appropriate screen size.
- Cross platform video material that doesn't rely on obscure codecs[1].
- Realistic file sizes that can be downloaded or streamed to the users.

During this process we found that low resolution videos, though they could be streamed, failed to fully convey the detail of the software on the screen, making it harder to follow the tutorials. Standard codecs for Quicktime and Microsoft.avi files worked fully and easily across platforms, so material could be produced in either of these formats. Low resolution equates to low file sizes and smaller bandwidth.

It was decided that the material should be delivered in a high resolution with a file size that equates to around 10 MegaBytes per minute of tutorial; this would mean a 20 minute tutorial would be 200MB in size, equivalent to High Definition television.

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[1] A codec is a device or computer program capable of encoding and/or decoding a digital data stream or signal. The word codec is a contraction of 'compressor-decompressor' or, 'coder-decoder'.

A delivery platform was created through Studentcentral and integrated with the course details for the students. It was felt at this stage that a forum for student discussion would enable online peer to peer review and sharing of best practice.

The content of the online resource was then outlined. It was felt that a tiered approach would be appropriate, with longer, more detailed, exercise led tutorials at level 1, with the level 3 tutorials being more task specific and less structured.

The tutorials replicated the exercises delivered in the classroom and are tailored to the teaching delivered within studio by studio lecturers.

Throughout the project the access to the online resource was monitored both in terms of visitor numbers and the number of times each video or PDF was downloaded.

Monitoring & Assessment

The resource is delivered in a tiered format that follows the way we find the students develop in their learning, becoming more confident in the medium and encouraging exploration and an individual approach to learning.

The exercises within the classroom at level one are repeated in full on the online resource to give students a chance to revisit the material in their own time. They are supported with documentation that takes the student through the exercise step by step. Repeating whole exercises introduces the students to the resource and also to the pattern of classroom led teaching and self directed study.

The exercises at level 2 are reproduced in part in the online resource and are supplemented with additional exercises that look at specific skills. They are also supplemented with step by step written material.

At level 3 the exercises are task specific, and are available for the students to select smaller files that can be viewed alongside the development of their design models.

The students are assessed through specific hand-ins at level 1 and 2, the brief for this submission is set by the ICT tutors and links directly to the taught curriculum, as supported by the online resource.

Students of all levels have access to seminar and tutorial sessions, with the tutors directing students to the resource when appropriate. New issues and questions raised in these sessions and via email requests lead to new material and videos being created in response.

We have had over 3000 unique visits to the site and over 500 complete downloads of the various files.

The online forum and discussion area was hardly used, the students preferred to share information through the studio, sharing knowledge that was particular to their studio or level of achievement. This promotion of studio culture was unintended and can be built upon in the 2009-2010 academic year.

Although this encourages and promotes studio culture and group learning within the year group, it doesn't encourage vertical learning, the passing of information between year groups and courses.

The way forward

Building on the success of the ICT online resource, exploring ways of making the resource 'sustainable'.

Online resources are difficult to maintain in terms of keeping the resource up to date, providing new material to keep pace with the changes in software, and the changes in teaching and learning methodologies.

The material on the resource is useful to all students of the built environment and may be useful to other design disciplines. The resource is directed at Architecture/Interior Architecture students specifically to meet a lack of course specific material.

Further work on this project should focus on:

- Exploring ways of making the resource available to more students, through other institutions, and courses.
- Examining other e-learning resources and existing models for their distribution.
- Developing a project outline that can provide a long-term framework for the online ICT resource.