Colloquium

Connect: an exercise in research-driven development

David Horwitz and Andrea Eden

David Horwitz (dhorwitz@ched.uct.ac.za) devotes most of his time to the development of web-based online learning projects. Andrea Eden (aeden@ched.uct.ac.za) is the project coordinator of connect, the UCT Multimedia Education Group’s online learning environment.

Background

Over the past five years the Multimedia Education Group (MEG) has been actively engaged in the development of connect, an online learning environment that aims to meet specific teaching and learning needs in a variety of courses at the University of Cape Town. The project is research-driven, allowing ongoing investigation into aspects of online collaboration, collaborative filtering and communities of practice (Carr et al., 2002a; Cox et al., 2002b; Cox et al., 2002c) to guide the design process.

The learning tool that has evolved from this active research steers clear of the conventional linear or modular framework of other online learning environments. Instead it takes advantage of the wealth of possibilities a hypertext environment has to offer. In doing so, we have sought to support rather than supplant traditional face-to-face teaching by providing new ways for students to interact with each other and the course content in an integrated, dynamic and unified space.

The environment has been deployed in numerous courses, ranging from first-year undergraduate courses to masters-level modules, in a variety of primarily Humanities-based disciplines, including Media Studies, Education and African Studies. Each course was selected for its suitability in terms of MEG’s research and the benefits that a web-based component could offer to the course. Development, while ensuring flexibility of design for customisation in future projects, has therefore targeted specific needs rather than widely perceived and far broader institutional needs.

connect is neither a distance education system, nor a generic course administration package—it is a unique, carefully customised tool that, with the dedicated support of lecturers, seeks to encourage users to share and build knowledge together.

The online learning environment

The earliest version of MEG’s online learning environment was developed in 1999 for an African Studies course that required a categorised listing of resources to which students and academic staff could add their own contributions. In response to feedback from users in that first project, the original idea underwent a metamorphosis and grew

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into a far more powerful tool with increased functionality and tighter integration between each of the web-based components that make **connect** what it is today.

Tools now available include ‘in-house’ developments and, where possible, open source modules that have been customised to suit **connect**’s technical requirements. For example, the need for a discussion engine led us to look for a robust system suited to a number of platforms. To replicate this functionality ourselves would not be practical, therefore we chose an open source alternative, which after a few adjustments, allows users to establish links between resources on the site and messages in the forum. A more detailed description of these two features and how they interlink, as well as the supporting functionality that has grown up around them, follows.

**Resources directory**

The resources directory is a database-driven module that allows staff and students to collaborate as they collect, filter, rate and categorise resource links, references or attached files. The directory functions like a library that can be focused and adapted to the needs of a particular course rather than a university community. The resources can vary from formal references to informal entries. The categorisation of resources can also range from a flat to a hierarchical structure, which can be set by the lecturer or dynamically generated by both students and lecturers throughout the course.

We use a forum for discussing the resources in the directory. Participants can link messages in the discussion forum to resources, making it easier to move backwards and forwards between the resource and the related forum discussions. Resources can be accessed through a searchable directory that can be viewed by topic, star rating, number of hits, common categories or in a chronological list according to the date they were added. Contributors and ‘my profile’ pages (see below) also allow for resources to be organised by course participant.

Integrating the resource directory into the teaching style and theory of the lecturer is crucial to its success as an educational tool. It is also important how choices are made in categorising resources and how the students are introduced to this functionality. We have used the directory in several courses as an information literacy tool to offer support to a postgraduate research project. We have also used it as a conceptual tool to assist students in making the connection between sequentially taught themes and the concepts linked across these themes. Recently, large undergraduate courses have used the directory as a space in which students, who may never meet each other face-to-face in a classroom, can contribute their own work or share useful material with one another with great ease, at any time of the day or night.

**Forum**

**connect** makes use of W-agora (http://www.w-agora.net), an open source discussion software package. Agora supports threaded discussions, moderation and a number of advanced features. For example, Agora will email users to inform them of replies to their messages in the forum. It also enables lecturers and students to subscribe to the
different discussions, which means that any new messages posted to the selected threads will be sent to the subscriber’s email account along with a direct link back to the discussion where the person can reply to the message. The lecturers with whom we have worked have found this feature to be very useful as it saves them time and ensures that the course participants remain up to date with the latest discussions. As described above, the version of Agora used in connect is slightly modified so that users can insert links to resources within their forum messages.

**Supporting functionality**
For every course that is added to the list of active sites, enhancements and sometimes entirely new tools have to be added. This is necessary so that connect can meet at least some of the specific educational and administrative needs that require more than the basic resource directory and forum functionality. A brief description of connect’s key features follows.

**Contributors**
connect has a script that checks the university’s student record system and generates a class list of every student who is registered for the course. This list is displayed on the contributors’ page along with each individual’s contributions to the resource directory and the forum, so that users can track each other’s activity and tutors can easily access records for marking purposes.

**My profile**
A profile is created for each user so that students can edit their name, email address and telephone number. Test scores, as well as contributions to the resource directory and the forum, are also displayed on this page.

**Presentations**
Lecturers and/or students can build a dynamic presentation by selecting items from the resource directory and forum they wish to display. Numerous tools allow for the editing of these presentations.

**Polls**
Interactive polls are a popular feature, largely because of the simplicity and flexibility they offer in terms of gathering data. They can be used to gauge student reactions to course content, find out more about course participants, and obtain all sorts of other valuable facts and figures, which can quickly be fed back into the course and into any ongoing research.

**Calendar**
The calendar allows users to view monthly course information at a glance, including due dates for tasks and important university timetabling. Quick links to each task and to the relevant section of the course outline, as well as past polls and tutorial schedules, are also available.

Course outline
The connect environment includes space for a structured course outline that is generated from the course database. The configuration (set-up) options enable lecturers to structure the course outline according to themes and/or by week. There are also links to key readings, all of which are stored in the resource directory, and associated presentations.

Tasks
This section details student tasks that need to be completed during the course, and includes assessment criteria for the marking of assignments.

Contacts
The contacts page dynamically generates a list of email addresses for all the lecturers, tutors and students involved in the course, as well as a quick list of fellow group members.

Administrative tools
An ever-growing set of administrative tools has been added to connect so that staff can play a greater role in managing the environment’s structure and content on the pages listed above by:

- Building and editing a dynamic course outline which can be linked to key readings within the resources directory
- Entering task information and setting simple online tests
- Creating newslashes that pop up on the homepage to alert students to key developments
- Developing online polls and presentations of course material
- Managing class groups and moderating the contributions of each user

The future
The development of connect continues as the environment is used in new contexts and with different student groups. Current plans include, among others, the addition of an open source chat module and integration between tasks and the forum, as well as the refinement of existing tools to accommodate an increasingly diverse user base. An extensive documentation project is also under way so that future users can make better use of MEG’s connect environment, which recently became available under an open source licence.

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