

teaching and learning i n n o v a t i o n

Experiences of using innovative teaching and learning methods at Loughborough University

volume 1 issue 6

New initiatives in Learning and Teaching

Our final issue of the session looks forward to some new projects starting up over the summer

Making time for innovation

Bryan Dawson and Heather Dalgleish describe the Secondment project, a collaboration between Support Services and two Faculties

When we came here in '96, we had a brief to promote the uptake of learning technologies into the mainstream teaching at Loughborough. We've made a lot of progress since then, with CAL, CAA and Web-based learning all increasing at rates of over 100% a year. But coverage is still patchy, and there is unsatisfied demand both for learning materials and implementation support.

One of the most commonly-cited reasons inhibiting the take-up of learning technologies is lack of *time* on the part of the academics. With this in mind, it was decided to apply some of the money from the Teaching Quality Enhancement Fund (TQEF) to a secondment programme which buys time for academics. By releasing the academics for 40% of their time (30 days over one semester), we hope we can:

- Contribute to the professional development of the seconded staff.
- Build up a skills base at departmental level, where it is needed.
- Generate some examples of how the Web can be used imaginatively.
- Create a toolkit of Web 'widgets' that can be re-used by everyone.
- Lead by example, setting high standards for Web-based learning resources.

- Investigate problems with web-based learning that are common to everyone – things like website maintenance, copyright and plagiarism issues.

With the advent of the *learn* server there has been a great deal of interest in the use of the WWW for teaching and learning. However, the greatest volume of material on the server is simply electronic versions of existing paper course documentation, which does not maximise the benefits of using a computer to teach.

The introduction of any new technology brings a training load with it, and whilst the *learn* server workshops provide an introduction to using the WWW for teaching and learning, there is not the resource available to fully exploit the potential of the Web.

This project provides funding for the one-semester secondment of teaching staff, in order to enhance their course development skills, particularly (but not exclusively) in the areas of Web-Based Learning and Distance Learning. A programme of activities has been put together which will equip the candidates with the skills needed to plan and execute the delivery of Learning Technology-based modules, with the objective that by the end of their semester's secondment they will be in a position to complete the development of a target module and have the tools and templates needed to repeat the operation on other modules. By the end of the two-year period of the project, we hope to have many examples of highly-interactive, engaging learning resources.

The trick has been to develop a programme which is flexible

Flexible
Learning

In support of teaching and
learning on and off campus

 Loughborough
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enough to handle the diverse needs of the individual academics, but at the same time is capable of delivering real innovations in a short time. To achieve this we are building on both local and national expertise, utilising materials from equivalent projects elsewhere, and linking with related projects on campus.

The resources developed by the project will include both *methodology* resources, covering pedagogic and operational issues, and *web technology* resources. These will be made available via the project website, and all staff will be able to join in the seminar programme which will be advertised both on the website and through Staff Development.

The first cohort of five secondees has already met, and will begin their work on the project at the end of September. A fresh invitation to take part in the project, covering secondments during 2001 and 2002 will be issued in the autumn.

Computer Assisted Assessment Unit – Recent Successes and Planned New Service

*Since our earlier focus on CAA
(Innovations 4) there have been a number of
important developments.
Myles Danson (CAA Officer) reports*

Background

The current CAA project at Loughborough has been running since January 1998. During this time the OMR CAA system has delivered and marked 210 supervised tests to 27000 students. This system is currently used by 16 departments, and is fully embedded with a training programme, code of practice and service level statement.

Introduced for trials in September 1999, the **Question Mark for Windows (QMWS)** PC based system is our screen delivered CAA system. This is mostly used for **unsupervised** tests, although some supervised sessions do take place. The trial period has involved 6 departments and the system has proved the demand for screen-based assessment from both staff and students having delivered and marked 28016 tests during 1999/00.

The need for a new web based system

Work has already been accomplished in evaluating web-based assessment by a previous project. This identified Question Mark *Perception* as the preferred solution for up-to-date web based CAA at Loughborough.

Web based assessment through *Perception* offers numerous advantages to the student, the lecturer and the administrator. These include an enormous potential for saving staff time, enabling rapid delivery of assessment results to students, and the support of formative assessment to facilitate reflective learning. Other benefits include:

- Single point delivery through the *learn* server
- Web based delivery (tests are available on or off campus)
- Supports distance learning assessment
- High quality question design (supports more types of question than just multiple-choice) including highly interactive testing with instant feedback
- Enhanced reporting software supports both assessment and evaluation
- Questions are stored in a central database
- Tests can be scheduled automatically (according to those registered on a module)
- Tests can include graphics and multimedia.
- Opportunity to share questions as resources from sources external to the University
- Marking is not prone to human error
- Can reduce the opportunity for cheating through randomisation of questions and use of the question database
- Adaptive testing can be used to match the test to the students' ability
- Formative assessments can be repeated as frequently as desired to aid student learning
- Quality can be monitored by looking at the performance of questions
- Can be used for applications other than CAA (research questionnaires, module evaluation, registration, application forms etc.)
- Automated authentication is possible from our existing authentication system
- *Perception* is compliant with the emerging IMS standards (a future-proofing measure)
- Administrative tools are included (system is scaleable to a service)
- Direct upgrade route from QMWS to *Perception* (we have made significant investment in QMWS material)
- One central copy of the test (easily updated)
- No printing costs.

TQEF CAA Project

TQEF funding has been secured to implement a web based CAA System based on *Perception* that will be offered to all staff as a central service, drawing on the experiences gained throughout the duration of the CAA Project. This will be achieved by upgrading existing QMWS tests to *Perception* as well as developing new assessment approaches using web-based assessment within the three Faculties.

The system will be complimentary to the current OMR CAA Service providing the University with a range of CAA services that support both supervised and unsupervised testing, and that could be offered on the *learn* Server to support a wider variety of learning platforms including Distance Learning (DL).

The project is now underway and will run for three years. A site license has already been negotiated allowing the system to be freely available to all departments. We aim to have a trial system in place for September 2000 and will offer the system as a service to all staff later in 2001.

JISC CAA Project

External funding has been acquired from the JISC Managed Learning Environments initiative. This is to take the Perception CAA system further than was originally envisaged under the TQEF CAA project. It will build on our current experience of screen delivered CAA but take integration with our main Management Information Systems (MIS) further. The key features relate to embedding the system within the university infrastructure. This will encompass technical as well as administrative and pedagogical development to achieve a user-friendly CAA system that is seamless, interactive and student centered. From this experience we will create a generic model to offer to other HEI's.

There are many features to this project; automatic candidate authentication, automatic upload of scores to the central student records database, a mechanism for staff to ratify these, and the identification of measures to ensure against electronic cheating are just a few examples of the work to be undertaken.

The project is due to start in October 2000 and will involve a wide cross section of University staff over and above Computing Services and Learning and Teaching Development.

Providing a national, subject-based focus for learning and teaching support

Fiona Lamb of the LTSN Centre for Engineering gives the background to the new LTSN centres

It is recognised that for many in higher education, most networking and exchange of learning and teaching practice and innovation takes place within the subject discipline. In order to support this activity effectively the UK funding bodies have committed over £6M annually to establish a Learning and Teaching Support Network (LTSN) comprising 24 subject-based centres.

Each centre provides subject-based support to promote high quality learning and teaching within their discipline. They aim to become the main points of contact within subject communities for information and advice on good practices and innovations in learning and teaching, and will provide support for the many networks that already exist. The centres will have high visibility within their subjects and provide both a pro-active and a responsive service to the needs of their communities.

The 24 subject centres are:

- Art, Design and Communication
- Bioscience
- Business Management and Accountancy
- Education in the Built Environment
- Economics
- Education
- **Engineering**
- English
- Geography, Earth and Environmental Sciences
- Health Sciences and Practice
- History, Classics and Archaeology
- Hospitality, Leisure, Sport & Tourism
- **Information and Computer Sciences**
- Languages, Linguistics and Area Studies
- Law
- Materials
- Maths, Stats and OR Network
- Medicine, Dentistry and Veterinary Medicine
- Performing Arts
- Philosophical and Religious Studies
- Physical Sciences
- Psychology
- Social Policy and Social Work
- Sociology, Anthropology and Politics



Members of the LTSN Engineering team, pictured at their launch event in June.

In addition to the 24 subject-based centres, there is a Generic Learning and Teaching Centre which looks at the learning and teaching issues and practices common to all subjects, reducing duplication and building links between the subject centres.

Loughborough University is closely involved with two centres: LTSN Engineering, hosted by the Faculty of Engineering, and the Centre for Information and Computer Science, co-hosted by the Department of Information Science (together with the Department of Computer Science at the University of Ulster).

So how will these centres actually work in practice? Although each centre is working to the same overall aim, the strategy that each adopts will be tailored to the needs of their community.

For example, LTSN Engineering has one of the largest subject areas to support and the key to its success will be to secure

the involvement of the academics who deliver engineering education in higher education institutions, creating a facility that has national ownership. LTSN Engineering's activities are therefore tailored to this particular strategy:

- **Establishing the current needs of the community and future trends.** A substantial needs analysis exercise will be conducted in the first year.
- **Establishing and maintaining links with all centre stakeholders.** This includes setting up institutional contacts, forming links with professional institutions and working with cognate subject centres and existing engineering education and educational networks.
- **Raising awareness of LTSN Engineering's role in disseminating good practice and innovation in learning and teaching in engineering,** through discussion and mailing lists.
- **Collating and cataloguing relevant information resources.** The web-site and databases form the key dissemination channel for the centre and will have a high profile in the engineering academic community. The centre also has an information resources library.
- **Encouraging understanding and sharing of good practice and innovation in learning and teaching in engineering.** This will involve one-to-one advice, information pamphlets, commissioning of reviews and an annual workshop programme.
- **Encourage implementation and embedding of good practice and innovation in learning and teaching in engineering.** Working groups will undertake engineering education research and disseminate their findings through seminars.
- **Measuring the impact of the centre on the engineering community.** Evaluation procedures will be established to ensure that the centre meets the needs of the community.

The input of academics is vital for the successful development of each subject centre.

Further information is available on:

www.ltsn.ac.uk – The national LTSN site

www.ltsneng.ac.uk – LTSN Engineering

www.ics.ltsn.ac.uk – LTSN Centre for Information and Computer Science

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