

Team-based e-learning turns a new page

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How do students, who may be located across the globe, collaborate together on team-based project work? European researchers have developed the first online platform that integrates elements of e-learning, social networking and project management to help virtual teams get the most from their practical experience. How do you like to learn? Do you listen to a lecture and take notes, or would you prefer visual diagrams, pictures and handouts?

Whatever your favoured learning style, the listening and watching eventually comes to an end and it is time to “do”. Project work is one of the best ways to help people put theory into practice, to reinforce and apply new concepts or skills. People also benefit from working in a team, discovering the dynamics of collaboration and teamwork.

“Increasingly, project-centred teaching approaches are being adopted by institutions and enterprises”, says Xuan Zhou, a researcher at the Germany L3S Research Centre. “Teams, rather than individual students, will work on a given project and where support from teachers will often be substituted by interaction among team members (students). These team members may come from different institutions to provide different competencies and approaches.”

Numerous web-based packages are available that allow people to collaborate on and manage projects among remote teams. But these tend to be geared towards commercial project management and are not focused on project work as a learning process, per se.

The COOPER project has built a platform that meets the growing need for project-based e-learning. The platform combines functionality from project management, social networking methods and traditional e-learning systems. It provides a virtual environment in which geographically dispersed teams can talk together, contact tutors, set up project workflows and submit documents. It is especially for the university sector and companies with an international workforce or that have to train foreign customers.

“Most e-learning systems are based on modules, students work through a curriculum,” explains Zhou, a member of the COOPER consortium. “Usually a student has something to learn, and the tutor sets questions or an assignment to test what they have learned. Collaborative learning through teamwork projects need an entire project management system, but with e-learning functionality built in.”

Flexible workflows

The COOPER project realised that its project management tools had to be extremely flexible. “If team members were sitting together round a table they would have to agree on how to work best together,” says Zhou. “Would an individual take overall charge? Who would sign off on which documents, call meetings, or set deadlines? COOPER lets project teams set all these parameters and workflows. The participants’ roles and needs during the project’s life can vary; teams must manage change without requiring the intervention of administrators. The technology lets them easily make these changes.

This flexibility is possible because the COOPER platform uses a technique called Dynamic Process. By integrating Dynamic Process and WebML, a modelling language for web application, it allows the project team to effectively build its own, customised project management system and workflows.

Another important innovation is the integration of several communications systems, including voice over IP (VoIP) and video conferencing. Team members can speak with one another, hold virtual meetings, or leave messages for other team members or tutors.

One of the problems with project-based learning is that its impact is hard to assess. Another arm of the COOPER project has looked at various assessment strategies. The research partners realised that standard question/answer assessments were less suitable. Instead, they are developing tools that follow a system from the Open University of the Netherlands and the Central Institute for Test Development (CITO), which includes long-term assessment schemes.

What's the point?

Sometimes students find teamwork projects vacuous, especially when they know that the final output is deemed less important than the production process. But COOPER gives added value to project results. All the output from projects is analysed and archived to build up a “project memory bank”. This “collective memory” can be used to enhance study programmes and for institutions to provide public information about their curricula and innovative projects.

Three end-user partners are currently testing the COOPER platform. The ALaRI master programme, part of the University of Lugano, and the Alta Scuola Politecnica in Milan are both using COOPER to organise teams of remote students working on real-life problems set by sponsors and external organisations. CoWare, an embedded chip manufacturer, has offices around the globe, and is using the COOPER platform to improve its technical training programmes. Teams of company employees, vendors and engineers in customer companies work through case studies and real-life problems to find solutions and build prototype products.

The project is due to end in March 2008 and the majority of the COOPER platform will be freely downloadable over the web, except some commercial components, such as the visual design tool WebRatio and VoIP, which can be requested under academic license agreement. Project partners will provide consultative services.

Source: [ICT Results](#)

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