
Editorial

Lorna Uden

Faculty of Engineering, Computing and Technology,
Staffordshire University,
The Octagon, Beaconside, Stafford ST18 0AD, UK
E-mail: L.uden@staffs.ac.uk

Biographical notes: Lorna Uden is Emeritus Professor of IT Systems in the Faculty of Computing, Engineering and Technology at Staffordshire University. Her research interests include technology learning, HCI, activity theory, knowledge management, web engineering, multimedia, e-business, service science and innovation, semantic web, and problem-based learning.

Welcome to V6 N1 of this journal. There are four papers in this issue ranging from design of educational technologies to ubiquitous learning model focused on learner interaction. The first paper is by Yael Kali and Tamar Ronen-Fuhrmann. Their paper, 'Teaching to design educational technologies', is about supporting novice educational technology designers. According to these authors, the goal of their research was to explore ways to support graduate students in education (novice designers) to design educational technologies. By examining the learning processes of these students in courses that were based on the teaching model developed in this study, and by documenting the challenges that they encountered, and achievements they reached in successive versions of these courses, they were able to build a generalised pedagogical model for teaching educational technology design.

In their research, these authors examined three courses in which graduate students learned to design technology-based curriculum modules. The courses were based on a teaching model developed in a design-based research methodology with four iterations. The model integrates the openness of a studio approach, with the structure of a well-known instructional systems-design process. It also takes advantage of experts' design knowledge embedded in a database of design principles. Qualitative data was used to evaluate the affordances and challenges of progressive versions of the teaching model. A generalised model for teaching educational technology design was derived, in which the following constructs are intertwined:

- a structuring the design process
- b building on accessible repositories of expert design knowledge
- c enabling dialogic learning.

The second paper, entitled 'Supervised classification on navigational behaviours in web-based learning systems to identify learning styles', is by Nabila Bousbia, Jean-Marc Labat, Amar Balla, and Issam Rebai. Their paper discusses the possibility to automatically identify some aspects of learning systems based on simple navigational information. According to these authors, Education Hypermedia Systems (EHS) use learning styles (LS) as a criterion for adaptation and tracking. To measure these styles,

EHS are generally based on the questionnaires provided by the LS model used, and that learners should answer before the first session. This approach has a major drawback: learners' LS are defined only once. To overcome this limitation, recent researches are currently being carried out on the detection of LS based on learner's interaction traces. The authors' general criticism is related to the use of a specific environment, and therefore specific traces and indicators. To overcome this, they have identified the learner's LS automatically, based on simple navigation traces. In this paper they present experimental results of identification of sequential/global and active/reflective LS, for 45 students, using supervised classification. The findings provide initial evidence that LS can be automatically identified based on learners' navigation behaviours.

The third paper, 'Cooperative learning and electronic group portfolio: tutoring tools, development of competences and assessment', is by C. Gil, M.G. Montoya, R.I. Herrada, R. Baños, F.G. Montoya and F. Manzano-Agugliaro. Their work analyses the use of cooperative learning in conjunction with an electronic group portfolio in university education. According to these authors, when working in cooperative groups, students are required to be aware of the changes that take place throughout the learning process and to reflect on the benefits or drawbacks of different approaches to learning. These authors believe that the use of an electronic group portfolio could enhance the learning process because it enables the development of tutorial action, generic and specific competences and assessment. This paper analyses a novel teaching methodology, carried out in a university engineering degree, based on the use of cooperative learning in conjunction with an electronic group portfolio. The results obtained show that, while cooperative learning allows the students to develop competences such as teamwork, they can also develop other competences such as assessment using the features of the electronic group portfolio. The findings suggest that using the electronic group portfolio improves the performance of cooperative learning activities. In particular, the perception of the lecturers, the opinion of the students and their academic results show that this new methodology motivates the students. As a result, they become more actively involved in completing the proposed activities, with a greater number of students working on the subject on a daily basis.

The effectiveness of this learning methodology has been evaluated by means of critical incident questionnaires, surveys and by analysing the final grades obtained by the students. The results obtained show that the use of the electronic group portfolio in a cooperative learning environment has allowed the development of competences which would have been difficult to achieve following the traditional lecture system and assessment in a final examination.

The fourth paper is by Jorge Luis Victória Barbosa, Rodrigo Machado Hahn, Débora Nice Ferrari Barbosa, and Amarolinda Iara da Costa Zanela Saccol entitled 'A ubiquitous learning model focused on learner interaction'. According to these authors, ubiquitous learning refers to learning supported by the use of mobile and wireless communication technologies, sensors and location/tracking mechanisms, that work together to integrate students with their environment. In this paper, they present a ubiquitous learning model called location and context-aware learning (LOCAL). LOCAL uses two pedagogical strategies:

- 1 context-aware content distribution using learning objects
- 2 stimulus to the interaction among learners.

The model is self-sufficient since it does not require complements of a ubiquitous middleware. Moreover, LOCAL uses location information and learner profiles in a generic approach, namely, it was not designed to any specific kind of learning application. LOCAL has been tested at Unisinos in order to support ubiquitous learning. The authors have created a small-scale ubiquitous learning scenario based on LOCAL and used it to evaluate the system's functionality and usability. Two functionalities tests proved that LOCAL can be used to stimulate the learner interaction and to distribute contextualised learning objects. In a third test, LOCAL usefulness was positively evaluated by 20 individuals of a Computer Engineering undergraduate course.

The last paper is by Yin Leng Tan and Linda A. Macaulay entitled 'The impact of group intelligence software on enquiry-based learning'. These authors argue that despite increasing use of groupware technologies in education, there is little evidence of their impact, especially within an enquiry-based learning (EBL) context. In their paper, they examine the use of a commercial standard group intelligence software called GroupSystems®ThinkTank1. To date, Thinktank has been adopted mainly in the USA and supports teams in generating ideas, categorising, prioritising, voting and multi-criteria decision making and automatically generates a report at the end of each session. The software was used by students carrying out an EBL project, set by employers, for a full academic year. The criteria for assessing the impact of Thinktank on student learning were those of creativity, participation, productivity, engagement and understanding. Data was collected throughout the year using a combination of interviews and questionnaires, and written feedback from employers. The overall findings show an increase in levels of productivity and creativity, evidence of a deeper understanding of their work but some variation in attitudes towards participation in the early stages of the project.