

---

## Editorial

---

### Lorna Uden

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

**Biographical notes:** Lorna Uden is the 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, mobile computing, cloud computing and problem-based learning.

---

Welcome to V6N3 issue of the journal. This issue consists of four papers. The first paper, 'Using an affective multimedia learning framework for distance learning to motivate the learner effectively' is by Makis Leontidis, Constantin Halatsis and Maria Grigoriadou. In this paper, the authors present an affective multimedia learning framework modelling emotional tutoring (MENTOR). MENTOR is a web-based adaptive educational system (WBAES). According to the authors, the main advantage of the multimedia technologies is their intrinsic motivational ability that can be used in order to prompt and engage the learner in the learning process. MENTOR is an affective WBAES for distance learning. The basic benefit of MENTOR is to retain the student's emotional state during the learning process. To achieve this, MENTOR incorporates an affective module which enhances the traditional learning practices with an affective multimedia dimension. The foremost and endmost goal of MENTOR is to provide the learner with a more personalised and friendly multimedia environment for learning, according to his personality, mood and emotions.

In this paper, the authors argue that the evaluation of MENTOR on performance and impact in the learning process by students was encouraging. The research findings support the hypothesis that the affective multimedia WBAES seems to have a significant effect on the students' attitude towards the tasks that they perform to achieve their learning aim. Further empirical studies are necessary to validate the effectiveness of this system.

The second paper is by Brent Fonville and Rick Dale. Their paper is 'Learning where it counts: an ecological argument for online education'. In this paper, Fonville and Dale argue that the implementation of learning technologies for online instruction and relevant testing raises issues concerning the ready availability and use of external reference materials that students may consult during evaluation but are not commonly found in in-class courses, such as the internet, class notes, and so on. Yet, the presence of such materials may be ecologically valid with respect to daily cognitive performance in any domain (e.g., reasoning and decision-making in everyday life).

This paper reviews three related theories of cognitive science: distributed cognition, active externalism, and transactive memory as they argue for an integrative cognitive

system that includes external artefacts, and thus goes beyond 'internal' processes as the sole purveyors of cognition. These authors use these theories to frame an argument that the use of online learning technologies could be considerably more ecologically valid than in-class testing based on this integrated external cognitive approach. This paper is conceptual one. There is little evidence that the concepts have been proven. Implementation will be required to validate the hypothesis.

The third paper entitled 'Towards a methodological framework for the cognitive-behavioural evaluation of educational e-games' is by Angeliki Antoniou, Dimitris Diakakis, George Lepouras and Costas Vassilakis.

In their paper, these authors proposed a methodological framework based on reviews and knowledge from the field of cognitive psychology in order to evaluate aspects of educational games. In particular, they concentrate on two components of human cognition that play a central role in learning, namely memory and motivation. After having reviewed theories in the field, they created a questionnaire in order to evaluate educational games. The questionnaire incorporates different experimental findings of cognitive psychology. In particular, they applied Maslow's motivation theory, Behavioural findings on reinforcement, experimental findings about attention and memory. The authors then presented the results from the evaluation of three games, Angry Birds, PAC-MAN and Mega Jump. Their results confirmed the user ratings of the three games, showing that there seem to be cognitive reasons for the success/failure of different games. A list of guidelines for developers is also included. For the result to be convincing more studies and experiments would be required to verify the effectiveness of the framework.

The last paper is by Jihen Malek and Mona Laroussi. In their paper, 'A model-driven approach for modelling and simulating new malleable learning scenarios for digital native generations', they talk about context-aware and adaptive learning scenarios. According to these authors, students today are learning in a pervasive environment. However, none of the existing tools supports pervasive and mobile computing related concepts. These authors have proposed an approach that aims at supporting pedagogical designers and teachers to invent, model, generate and simulate innovative context-aware adaptive, challenging and pervasive learning scenarios for teaching students.

The new scenarios they called 'malleable learning scenarios' aim at ensuring the learner's autonomy, motivation and challenge by experimenting with various learning scenarios indoors and outdoors. They also aim at enhancing interaction and collaboration through collaborative and challenging context-aware learning activities that take place in different locations and at many stages and levels.

In order to apply and test this approach, an authoring tool called context and activity adaptive modeller for malleable learning environments (ContAct-Me) was created. ContAct-Me is based on context-aware adaptive activities modelling language (CAAML).

To test and evaluate their work, they presented a learning scenario that values the importance of the proposed graphical language in expressing, modelling and simulating new malleable learning environments. Like most of the previous papers, further work will have to be undertaken to conduct empirical studies for the framework.