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Special Issue of Computer Applications in Engineering Education: Portable Learning Technologies for Engineering Education

Communication and computing technology has a major impact on the engineering education system. It improves the students learning experiences. Learning Technology includes computer-based learning and multimedia materials and the use of networks and communications systems for better learning process. Technology also has the power to transform teaching to a new model of connected teaching. It helps in achieving significant improvements in productivity by accelerating the rate of learning. It helps in better utilization of teacher/faculties time & effort. As the number of students choosing to pursue science and engineering has declined, educators can use visuals to engage students in active learning and strengthen learning experiences. Classroom oriented tools have been the primary focus of previous R&D, the field must make a crucial transition to focus on ubiquitous access to information appliances by all learners, both in and out of school.

Though various online Learning Management Systems (LMSs) and Personalized Learning Environments (PLEs) exist, the distributed and flexible nature of the learning process creates new challenges. It becomes much harder for teachers to observe, control and adjust the learning process. A teacher could not be able to observe live statistics about what and how learners are doing. One of the distinguishing elements of engineering education is the laboratory requirement. Computer, software and electronics engineering experiments are more likely to be performed through simulation, while power, civil and control engineering experiments are suitable to be carried out through remote lab. The biggest challenge facing both institutions and instructors is how they are going to place ''real'' labs on the Internet.

Most importantly, we need to keep questioning whether learning technology really delivers benefits for all students. It is impossible for a teacher to consider individual capabilities and preferences of each learner. Research need to be carried out with an understanding of both educational needs and technological possibilities, also be based on technical trends, learning theory, changing school realities, possibility marketing arrangements, and disseminator strategies. Close collaboration among a broad range of researchers, industries and schools is the only strategy that can marshal these resources in a timely, effective manner. Dynamic interactive images based on models may allow broader access to understanding;

The right combinations of inexpensive portable computers, wireless networking, component and learning software (content, tools, activities) could enable many more learners to engage in deeper levels of learning. This can be enabled by Network-based collaborative learning tools, multiuser virtual environments and social information filtering. These new connections may also support deeper engagement and ongoing professional development for teachers, and engage disciplinary experts and parents in distributed learning environments.

Potential topics included, but are not limited to:

- Collaborating of broad range of researchers, industries and schools for better learning experience

- Development of dynamic interactive images based models for engineering education

- Analysis of network-based collaborative learning tools for engineering education

- Multiuser virtual environments in learning technologies for engineering education

- Crucial transition of focus on access to information appliances by all learners

- Engaging parents and disciplinary experts in distributed learning environments

- Mobile learning technologies in distance education

- Portable learning technologies for science museum learning

- Cognitive process with IoT for e-learning environment

- Integration of open technologies for e-learning environment

- Mobile technologies for STEM teaching and learning

- A research synthesis of portable Learning culture and impacts in student of engineering education

- Mobile technologies for sustainable learning and reform

- Mobile Learning Technologies to enhance student engagement and retention

- Innovative pedagogy and mobile learning for engineering education

- Context-Aware Mobile Learning technology in engineering education

- Advances in the industrial engagement in engineering education

- Portable learning technologies to educate modern electrical engineer

- Mobile platforms to estimate sustainable transportation infrastructure learning

- Systematic analysis of the impact of industry engagement on student learning

Important Dates:
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