



EDITORIAL

Smart Education Method, Technology and Environment

Guest Editor

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Technologies are reshaping the education. This special issue collected seven interesting papers sharing the experiences developing and using the technologies in education.

The first paper entitled **“Learning in Global Teams: BIM Planning and Coordination”** co-authored by Carrie Sturts Dossick, Hoda Homayouni, and Ghang Lee presents a special course with the students of seven universities from all over the world, including Indian Institute of Technology Madras (IIT), National Cheng Kung University (NCKU), National Taiwan University (NTU), the University of Twente (UT), the University of Washington (UW), Washington State University (WSU), and Yonsei University (YU). Students collaborated and coordinated their work in a virtual world using the internet and online communication software. They learned to use technology to work with the remote team members and compete the project cooperatively.

The paper entitled **“Instruction in Divergent Thinking for Conceptual Design: A Case Study Based on a Corkscrew”** co-authored by Ying-Chieh Liu, Chin-Yu Kao, and Amaresh Chakrabarti presents the technique to trigger the original ideas for designers. They especially focuses on the training of diverging thinking for the design stage. abstraction. The method has two steps. The first step involves presenting learners with an abstract representation of an existing artifact so as to stimulate design concepts. In the second step, learners are encouraged to come up with new, potential design concepts based on their individual interests, memories, or imagination. The step-by-step process facilitates learners to foster ideas during a six-hour workshop.

The paper entitled **“Teaching Practices for the Student Response System at National Taiwan University”** authored by Jennifer Wen-Shya Lee and Mei-Lun Shih presents the application of a student response system

(SRS). They especially research the factors to maintain students’ attention and interest using SRS and found the critical factors: (1) designing pre- and post-instruction content comprehension assessments, (2) ensuring participatory learning through guided classroom discussions, (3) combining theory and practice, and (4) implementing group report evaluation participation.

The paper entitled **“CIM: Capability-Innovation-Motive Teaching Model for System Engineering Education – “Embedded Operating Systems” as an Example”** co-authored by Yu-Lun Huang, Chao-Yang Cheng, and Sunny S. J. Lin presents an ambitious work on reshaping engineering education. They developed and implemented innovative teaching model, Capability-Innovation-Motive (CIM), on traditional engineering course: embedded operating system (EOS). They redesign the course and embedded the cultivate students’ innovative skills.

The paper entitled **“Overcoming technophobia in poorly-educated elderly – the HELPS-seniors service learning program Long-term RFID SLAM using Short-Range Sparse Tags”** co-authored by Chwen-Chi Wang and Jin-Jong Chen focuses on the technology to learn health management. It introduces the Health Education Learning Program with Science for seniors (HELPS-seniors) program. This program focuses on encouraging subjects with little technology experiences and educate them to adopt health management technologies.

The paper entitled **“A Collaborative Authoring Workspace and Script-Based Control Platform for Heterogeneous Robots”** co-authored by Jin-Ling Lin and Kao-Shing Hwang presents a control platform to manipulate multiple robots. This platform, allowing students to co-author the control scripts, provides an ideal learning environment to experience collaborative



creativity.

The seven papers presented very different approaches on education. They are ideal evidences demonstrating the use of technologies to “smart” the education. From the papers, we learned the computing

and communication technologies are changing the ways of teaching and learning. With the increasing advance on communication and computational technologies, we can expect the increasingly changing learning environments in the future.

