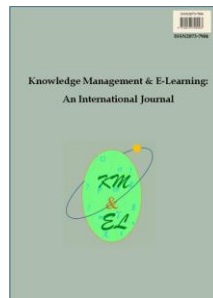




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Editorial: Technology for higher education, adult learning and human performance

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Abstract: This special issue is dedicated to technology-enabled approaches for improving higher education, adult learning, and human performance. Improvement of learning and human development for sustainable development has been recognized as a key strategy for individuals, institutions, and organizations to strengthen their competitive advantages. It is crucial to help adult learners and knowledge workers to improve their self-directed and life-long learning capabilities. Meanwhile, advances in technology have been increasingly enabling and facilitating learning and knowledge-related initiatives. They have largely extended learning opportunities through the provision of resource-rich and learner-centered environment, computer-based learning support, and expanded social interactions and networks. Papers in this special issue are representative of ongoing research on integration of technology with learning for innovative and sustainable development in higher education institutions and organizational and community environments.

Keywords: Educational technology; Higher education; Adult learning; Human performance

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1. Introduction

Globalization and economic dynamics have forced individuals and organizations to search for new ways to strengthen their competitive advantages. Improvement of learning and human performance for sustainable development has been recognized as a key strategy (Tynjälä, 2008; Wang & Yang, 2009; Wang & Chang, 2012). In this context, it is crucial to help learners in educational institutions and knowledge workers in organizations to improve their capabilities for self-directed and life-long learning (Wang, Vogel, & Ran, 2011). Moreover, learning in this context has expanded from individual to organizational and community levels with new focuses such as creation of new knowledge and retention of knowledge assets for sustainable development (Liebowitz, 2009; Rosenberg, 2012).

In the meantime, advances in technology have been increasingly enabling and facilitating learning and knowledge-related initiatives. Technology has fundamentally changed the way to access knowledge and to communicate with others. Various technology-enabled solutions and novel approaches are widely used in educational institutions, corporations, governments, and communities. They have largely extended learning opportunities through the provision of resource-rich and learner-centered environment, computer-based learning assistance, and expanded social interactions involving the development of new forms of learning communities and networks. Examples of the technologies include Blackboard and Moodle systems for learning content management, Web 2.0 tools such as wiki and blog for social learning and

communication, and computer-based simulations and virtual reality technology for learning in rich simulated environments. More recently, the cloud computing technology and the model of Mass Open Online Courses (MOOCs) have brought unprecedented opportunities for educational institutions and other organizations to extend their ICT capacity and for people to access and share knowledge resources with high flexibility and wide choices.

The papers in this special issue are intended to be representative of ongoing research with practical implementations and evaluations of emerging technologies for improving higher education, adult learning, and human performance, with an international scope.

2. Preview of papers

Participation in in-service training can be a challenge for health workers, especially those based in remote areas. In the first paper “Evaluation of spaced education as a learning methodology for in-service training of health workers in Ethiopia”, Kate Tulenko and Rebecca Bailey discussed a novel learning approach for health workers in remote areas and low-resource settings. The approach involved case-based learning scenarios and multiple choice questions for self-assessment, in addition to computer-based personalized feedback containing photos and illustrations as well as adaptive follow-up exercises.

Social networking has received continued attention in computer-supported collaborative learning environments. The 2nd paper “Gender differences in collaborative learning over online social networks: Epistemological beliefs and behaviors” by Rosanna Y.-Y. Chan, Jie Huang, Diane Hui, Silu Li, and Peng Yu examined the gender differences in online social network beliefs and behaviors. They used mixed methods of longitudinal social network analysis and quantitative beliefs surveys to explore the problem and demonstrated significant gender differences among engineering postgraduate students in their collaborative learning in a blogging community.

The proliferation of a large amount of online training programs and resources brings challenges for organizations to make appropriate choices. Cheryl A. Murphy, Elizabeth A. Keiffer, Jack A. Neal, and Philip G. Crandall addressed the challenge in their paper “A customizable evaluation instrument to facilitate comparisons of existing online training programs.” They designed an evaluation instrument of online training programs that helped decision makers to assess multiple online training programs against known best practices and use a weighting process to take context specific training needs into account. The proposed instrument was found to allow for consistent rankings by raters across multiple programs.

With the increased application of e-learning in educational and organizational settings, there is a need to examine the antecedents of success for different levels of learners in such environments. The 4th paper “A brief examination of predictors of e-learning success for novice and expert learners” by Emily Stark, Andrea Lassiter and Ashley Kuemper presented an empirical study to explore the problem with a view to determining the kinds of support to be provided for low-level and upper-level learners in their e-learning programs.

Teaching and learning of professional knowledge associated with complex problem in work practices is always a challenge. Hanni Muukkonen, Kari Kosonen, Pentti Marttiin, Petri Vesikivi, Jyrki Kaistinen, and Göte Nyman explored the challenge in their paper “Pedagogical design for knowledge creating inquiry in customer projects.”

They proposed the pedagogy for learning with customer projects, in which they highlighted customer involvement in the project planning and initiation stages, guidance from experts in the initiation and execution stages, and technology-supported mediation and collaboration throughout the entire project period.

Collaborative learning in an online environment can be challenging due to the lack of face-to-face interaction. The 6th paper “Collaborative learning using VoiceThread in an online graduate course” by Yu-Hui Ching and Yu-Chang Hsu examined twenty graduate students’ experience of using VoiceThread for a collaborative activity in an entirely online course to explore students’ perceptions of using multi-modal communication for collaboration and knowledge sharing.

In the 7th paper “A study on online learner profile for supporting personalized learning,” Jie Yang discussed the use of online learner profile, including the individual profile to capture the personal features and the community profile to capture the social features in online learning environment, for providing personalized support to learners.

3D virtual environments like Second Life have been increasingly adopted to provide immersive learning environment and rich use of multimedia and communication. In the 8th paper “Evaluating students’ perception of a three-dimensional virtual world learning environment,” Michael Chau, Wai-ki Sung, Songnia Lai, Minhong Wang, Ada Wong, Kristal W. Y. Chan, and Tim M.H. Li examined students’ perception of such learning environment and demonstrated the potential of using it in higher education.

Videos, animations and other visualisations have been used to illustrate complex concepts, in which the layout and presentation of the information may significantly affect student learning. In the 9th paper “A theory-to-practice approach for teaching science with animations”, George Hatsidimitris discussed some key issues including split attention, signaling, segmentation and strategic learner-control in the design and use of computer-based animations in science education.

The 10th paper “What makes lecturers in higher education use emerging technologies in their teaching?” by Judy Backhouse investigated the motives for using emerging technologies in higher education in South Africa. A mix of pedagogic concerns, pragmatism and external imperatives in addition to empowerment issues were discussed.

One mission of higher education is to meet the needs of communities. The 11th paper “A technology enhanced course for communication incorporating empathy” by Tosh Yamamoto, Masanori Tagami and Maki Okunuki discussed the technology-enhanced design of a course for developing students’ advanced communications skills by incorporating empathy, in response to the need of resilience in the society after a natural disaster in Japan.

In the last paper “e-Learning trends in Central Europe: The case of the Czech Republic,” Ludvík Eger and Dana Egerová presented a survey with selected experts to identify the current and future trends of e-learning in the Czech Republic. The results reported a number of identified trends, which were found to be influenced by political, economic, social and technological factors.

3. Conclusions

This special issue provides a forum for academics and practitioners to draw attention to recent research on technology in higher education, adult learning, and human development. The international scope of these studies is distinctive. The breadth of applications discussed in these papers is important. We hope that this special issue will foster further interest in what we believe will become an area of increasing importance, in which new technologies are developed and their efficacy explored to support and transform learning for innovative and sustainable development at individual, community, and organizational levels.

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