

EDITOR'S INTRODUCTION

In this 2014 second issue of *Research and Practice in Technology Enhanced Learning*, we are delighted to present a Special Issue on the theme “Optimizing Learning: Technology Meets Learning Sciences” with four selected articles, on top of our regular publication of original articles.

The Special Issue on the theme “Optimizing Learning: Technology Meets Learning Sciences”, with Kian-Sam Hong, Kwok-Wing Lai and Keith Sawyer as Guest Editors, aims to disseminate innovative research and empirical practice on the optimal use of technology for enhancing learners’ learning experience and performance in various disciplines and domains. The Editorial by the Guest Editors delineates the theme of the Special Issue as well as introduces the individual articles. I would like to take this opportunity to sincerely thank the Guest Editors for their great commitment and expert input in the realization of the Special Issue.

In addition to the four Special Issue Articles, this issue presents three Original Articles focusing on the flexible pedagogical support for collaborative model-based inquiry, the overall behavior of students using intelligent tutoring system, and the important roles of headmasters in school ICT implementation.

The paper by Sun and Looi, *Designing for Model Progression to Facilitate Students’ Science Learning*, investigates the approach of model progression in a computer-supported collaborative learning environment for supporting science inquiry among secondary school students in Singapore in learning physics topics. By analyzing students’ modeling performance, peer discussion and self-reflections in the trial instruction period, the authors identify the characteristics of students’ model progression in collaborative learning activities, the influences of students’ modeling performance on their learning collaboration, and the value of model progression approach on improving students’ conceptual understanding.

The paper by Ranganathan, VanLehn and Van de Sande, *What Do Students Do when Using a Step-based Tutoring System?*, studies the overall behavior of students when they worked with a step-based tutoring system for physics learning. The study involves a descriptive analysis that codes and categorizes data of talk-aloud episodes from university students who solve physics problems using the intelligent tutoring system. The study gives initial observations that how the students make learning errors, struggle to fix their mistakes, and give final learning products with correct entries in the step-based

tutoring system. The authors also discuss the inferences and suggestions for further research on the hinting and feedback design for intelligent tutoring systems.

The paper by Salleh and Laxman, *Headmasters and Information and Communication Technology: Approaches in Making the Connection*, looks into the ICT leadership of headmasters as an overarching drive of infusing ICT within primary schooling settings. Through two questionnaire surveys with headmasters and teachers, respectively, in all primary schools in Brunei, the authors identify five roles and six approaches of headmasters in implementing ICT integration and promoting teacher awareness of ICT in education; and six levels of ICT adoption among headmasters and teachers. The authors also discuss the importance of schools' strategic plans and their implications for teaching practices for ICT in education.

We keep soliciting an eclectic collection of quality paper submissions from researchers and practitioners around the world to share insights into the theoretical and methodological dimensions of research and practice in technology enhanced learning.

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