


EDITORIAL: SPECIAL ISSUE ON ADVANCED DIGITAL TECHNOLOGIES FOR BUILT ENVIRONMENT EDUCATION AND LEARNING

PUBLISHED: June 2010 at <http://www.itcon.org/2010/20>

GUEST EDITOR(S): Obonyo Esther Adhiambo and Issa Raymond Raja

REFERENCE: *Obonyo E A, Issa R R A (2010) Editorial - Advanced Digital Technologies for Built Environment Education and Learning, Special Issue Advanced Digital Technologies for Built Environment Education and Learning, Journal of Information Technology in Construction (ITcon), Vol. 15, pg. 269-270, <http://www.itcon.org/2010/20>*

COPYRIGHT: © 2010 The authors. This is an open access article distributed under the terms of the Creative Commons Attribution 3.0 unported (<http://creativecommons.org/licenses/by/3.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. 

1. INTRODUCTION

It is now universally accepted that educational technologies enhance the learning of science, engineering and technology through providing access to world-wide resources; facilitating the accumulation and presentation of data; and enabling communication, interaction, and collaboration among students and instructors. In the recent years, there has been an increased research interest in advanced digital technologies for the education and training of built environment students. Although computer-based technologies change very rapidly, the fundamental challenges that the research community must continue to address in their different areas of focus remain generally the same. The deployment of robust educational technologies requires strategies for dealing with micro-level issues such as user interface design and design variables. This will involve, for example, addressing outstanding research questions in Human computer Interactions (HCI) and cognitive ergonomics. Deploying robust educational technologies also requires investing some research effort in addressing meso-level issues that focus on the digital educational technologies as part of a usage situation. Finally, some research effort will also have to be invested in macro-level issues which focus on the broader implications such as the use of such technologies within the context of a globalized educational environment.

2. PAPERS IN THIS SPECIAL ISSUE

This special issue contains four papers focused in two education topic areas: Knowledge in Design Education, and Agent-Augmented Ontologies. The first paper is titled A Web-Based Teaching/Learning Environment to Support Collaborative Knowledge Construction in Design by Tuba Kocaturk. This paper discusses a conceptual framework to collect, analyze and compare different design experiences and to construct structured representations of the emerging knowledge in digital architectural design. Two experimental (design) workshops were used to determine the extent to which the framework facilitates generation, modification and utilization of design knowledge. The second paper by Rivka Oxman, Sharing Media and Knowledge in Design Pedagogy is focused on developing a theoretical basis for the conceptual mapping of emerging knowledge from both practice and theoretical resources. Subsequently a set of design models, concepts, relevant methodologies and precedents in digital design were developed. Finally a network representation for this emergent knowledge was mapped and constructed and used as a new basis for a pedagogical experiments in digital design. The final paper in this topic area is Intelligent Design in AEC Education by Nawari Nawari and is focused on the concept of Intelligent Design and examines its development and current use in AEC educational activities and how to seamlessly bridge the gap between education and practice through Intelligent Design-Based Learning (IDBL) approach. This includes the introduction of intelligent design as a knowledge-based model, or ontology to enable

an environment where virtual prototyping of the whole building or parts of structures prior to their construction, can be examined against code specifications and requirements digitally in an efficient manner. The fourth paper in this issue focuses on Agent-Augmented Ontologies. The paper is titled Towards Agent-Augmented Ontologies for Educational VDC Applications by Esther Obonyo. This paper discusses the potential for using agent-based technology to enhance the implementation of dynamic domain specific ontologies. From an educational perspective, this would be advantageous given the growing demands for educational institutions to graduate students who, in addition to being technically savvy, are also creative thinkers.