

**NORTH ATLANTIC UNIVERSITY UNION**

*Editors*

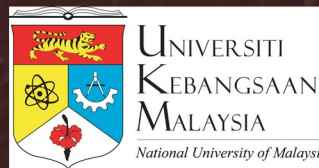
Azami Zaharim

Valery Vodovozov

# **Recent Advances in Educational Technologies**

**Proceedings of the 4<sup>th</sup> International Conference on  
Education and Educational Technologies (EET '13)**

**Scientific Sponsor  
University Kebangsaan**



**Cambridge, MA, USA, January 30 - February 1, 2013**



# **RECENT ADVANCES in EDUCATIONAL TECHNOLOGIES**

**Proceedings of the 4th International Conference on Education and  
Educational Technologies (EET '13)**

**Cambridge, MA, USA  
January 30 - February 1, 2013**

**Scientific Sponsor:**



Educational Technologies Series | 3

Published by WSEAS Press  
[www.wseas.org](http://www.wseas.org)

ISSN: 2227-4618  
ISBN: 978-1-61804-155-5

# **RECENT ADVANCES in EDUCATIONAL TECHNOLOGIES**

**Proceedings of the 4th International Conference on Education and  
Educational Technologies (EET '13)**

**Cambridge, MA, USA  
January 30 - February 1, 2013**

Published by WSEAS Press  
[www.wseas.org](http://www.wseas.org)

**Copyright © 2013, by WSEAS Press**

All the copyright of the present book belongs to the World Scientific and Engineering Academy and Society Press. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the Editor of World Scientific and Engineering Academy and Society Press.

All papers of the present volume were peer reviewed by no less than two independent reviewers. Acceptance was granted when both reviewers' recommendations were positive.  
See also: <http://www.worldses.org/review/index.html>

ISSN: 2227-4618  
ISBN: 978-1-61804-155-5



North Atlantic University Union

# **RECENT ADVANCES in EDUCATIONAL TECHNOLOGIES**

**Proceedings of the 4th International Conference on Education and  
Educational Technologies (EET '13)**

**Cambridge, MA, USA  
January 30 - February 1, 2013**



**Editors:**

Prof. Azami Zaharim, Universiti Kebangsaan, Malaysia.

Prof. Valery Vodovozov, Tallinn University of Technology, Estonia.

**Reviewers:**

Menaka Sivakumar

Wan Hussain Wan Ishak

Martin Skutil

Reza Sirjani

F. G. Lupianez

Ruzy Suliza Hashim

Ana Maria Tavares Martins

Daniela Litan

Andreas Veglis

Ahadollah Azami

Álvaro Santos

Kamisah Osman

Vasile Paul Bresfelean

José Metrólho

YuLung Wu

George Mavrommatis

Vehbi Neziri

Ana-Cornelia Badea

Abdul Wahab Mohammad

Claudio Guarnaccia

Catalin Ionut Silvestru

Mehdi Shariatmadari

Mirela Stoican

Nor Fariza Mohd Nor

Romlah Jaffar

Seong Baeg Kim

David Nicoleta

Claudia-Georgeta Carstea

Muhammad Fauzi Mohd

Aw Yoke Cheng

Arion Felix

Mihai Timis

Zamalia Mahmud

Paresh Rathod

Antonios S. Andreatos

Claudiu Mereuta

C. Girija Navaneethan

Ming-Shen Jian

Alejandro Fuentes-Penna

T. Subahan Mohd Meerah

Eustache Muteba Ayumba

Onintra Poobrasert

Masodi Saidfudin

Lukas Melecky

Mihaela Dudita

Panagiotis Gioannis

Noraida Haji Ali

Dario Assante

Philippe Dondon

Manuela Panoiu

Philippe Fournier-Viger

Ivan Pogarcic

Marcela Padilla-Guerrero

Santosh Kalwar

Valery Vodovozov

Pavel Varacha

Rauno Pirinen

Riza Atiq Rahmat

Antoanela Luciana Naaji

Deolinda Rasteiro

S. Sarala Subramani

Anabela Gomes

Mihaela-Carmen Muntean

Amjad Mahmood



# Table of Contents

<b><u>Plenary Lecture 1: Application of On-line Facilities in Producing Human Capital for Malaysian New Economic Model</u></b>	10
<i>Riza Atiq Rahmat</i>	
<b><u>Plenary Lecture 2: The Place of Diagnostic Testing in Preparing Students for 21st Century University Education</u></b>	11
<i>T. Subahan Mohd Meerah</i>	
<b><u>Plenary Lecture 3: Higher Education Research and Gender Inquiry</u></b>	12
<i>Ruzy Suliza Hashim</i>	
<b><u>Plenary Lecture 4: Lifting Up the Research University Status by Capitalizing Undergraduates Students' Research Skills</u></b>	13
<i>Kamisah Osman</i>	
<b><u>Turn Taking: A Tool for Dialog Processes</u></b>	15
<i>Giovanna Morgavi, Mauro Morando, Marconi Lucia, Cutugno Paola</i>	
<b><u>The Design of Intelligence Bulletin Boards by RFID Technology</u></b>	21
<i>Suwanna Sombunsukho, Pattarawit Polpinit</i>	
<b><u>A Lesson Learning on the Internet for Distance Education Teaching</u></b>	25
<i>Sittichai Kaewkuekool</i>	
<b><u>The Recognition of 3D Photos vision by Lenticular Technique</u></b>	30
<i>Waiyawat Saitum, Jeerapong Phudpong, Tharadon Masuk, Watcharakon Kamon</i>	
<b><u>Assessing Students' Level of Skills after Industrial Training Course: UKM Engineering Students' Perceptions</u></b>	35
<i>Nuraini Khatimin, Azrilah Abd Aziz, Siti Aminah Osman, Mohd Zaidi Omar, Rokiah Rozita Ahmad, Azami Zaharim</i>	
<b><u>The e-Portfolio for Understanding the City</u></b>	40
<i>Jordi Franquesa, Joan Moreno, Pablo Elinbaum</i>	
<b><u>Application of On-line Facilities in Producing Human Capital for Malaysian New Economic Model</u></b>	46
<i>Riza Atiq Rahmat</i>	
<b><u>Dragon Drop Pictorial Programming</u></b>	51
<i>Shannon Siless, Hacer Varol, Olamide Kolawole, David Key, Brad Houck, Cihan Varol</i>	
<b><u>The Impact of Popular Culture on Socio-Cultural Identities of Malaysians: A Qualitative Analysis</u></b>	57
<i>Ruzy Suliza Hashim, Mohd Muzhafar Idrus, Noraini Md Yusof, Imran Ho-Abdullah, M. M. Raihanah, Shahizah Ismail Hamdan</i>	
<b><u>Higher Education Research and Gender Inquiry</u></b>	62
<i>Ruzy Suliza Hashim, Noraini Md Yusof, M. M. Raihanah, Imran Ho-Abdullah, Mohd Muzhafar Idrus</i>	



<b><u>Can Problem Based Learning Create a Science Culture in the Classroom?</u></b>	67
<i>Kamisah Osman, Mohd Ali Samsudin, Lilia Halim</i>	
<b><u>E-Portfolio and Creative Writing by Young Malaysians: Production of Concrete Poems</u></b>	76
<i>Noraini Md Yusof, Ruzy Suliza Hashim, Shahizah Ismail Hamdan, M. M. Raihanah, Tajul Arifin Muhamad</i>	
<b><u>Cooperative Working Strategies Applied to Architectural Restoration Learning by using Web Sites</u></b>	82
<i>Mariona Genís-Vinyals, Albert Casals Balagué, Josep Lluís González Moreno-Navarro</i>	
<b><u>Information Flow Modeling to Provide Sustainable Cooperation between Educational Institutions and Entrepreneurs</u></b>	88
<i>Andra Jakobsone, Sarma Cakula</i>	
<b><u>New Approaches in the Use of Modern IT Technologies for Management Teaching</u></b>	94
<i>Veronika Faifřová, Václav Báröch</i>	
<b><u>Alterity Literacy and Popular Media</u></b>	99
<i>M. M. Raihanah, Ruzy Suliza Hashim, Noraini Md Yusof, Shahizah Hamdan</i>	
<b><u>Researching the Muslim Diaspora, Engaging Multicultural Literacy: A Pedagogical Approach</u></b>	104
<i>M. M. Raihanah, Ruzy Suliza Hashim, Noraini Md Yusof</i>	
<b><u>Using Blogs to Promote Writing Skill in ESL Classroom</u></b>	109
<i>Melor Md. Yunus, Julian Lau Kiing Tuan, Hadi Salehi</i>	
<b><u>Using Visual Aids as a Motivational Tool in Enhancing Students' Interest in Reading Literary Texts</u></b>	114
<i>Melor Md. Yunus, Hadi Salehi, Dexter Sigan Anak John</i>	
<b><u>Achievement of Course Outcomes in Basic Thermodynamics Course based on Students' Perception</u></b>	118
<i>Siti Rozaimah Sheikh Abdullah, Mohd Shahbuddin Mastar, Hassimi Abu Hassan</i>	
<b><u>Exploration of Malaysian Children's Attitudes towards Science and Scientific Attitudes</u></b>	125
<i>Kamisah Osman</i>	
<b><u>WebQuest in Biology Learning: Evaluation of Teachers' Perception</u></b>	129
<i>Kamisah Osman, Aty Muyassaroh, Lee Tien Tien</i>	
<b><u>Discovering the Learning Styles of Malaysian University Students</u></b>	134
<i>Hafizah Husain, Seri Mastura Mustaza, Fais Mansor, Wan Nurmahirah</i>	
<b><u>The Relationship of English Proficiency and Mathematics Achievement</u></b>	139
<i>A. S. Rambely, R. R. Ahmad, N. Majid, S. H. Jaaman</i>	
<b><u>Challenges in Teaching and Learning Mathematics in the Transition to English Medium</u></b>	146
<i>R. R. Ahmad, S. H. Jaaman, N. Majid, A. S. Rambely</i>	
<b><u>Critical Issues in Preschool Education in Malaysia</u></b>	150
<i>Rohaty Mohd Majzub</i>	

<b><u>Development of Quality Management Systems for Polytechnic Engineering Laboratory</u></b>	156
<i>Ruhizan M. Yasin, Zunuwanas Mohamad, Mohd Nizam Ab Rahman, Mohd Sattar Rasul</i>	
<b><u>Profiling Willingness to Advocate Water Conservation Behaviour: Item Validation using Rasch Measurement Model</u></b>	162
<i>Wan Nur'Ashiqin Wan Mohamad, Ruhizan M. Yasin, Mazlin Bin Mokhtar, Mashitoh Yaacob, Norzaini Azman</i>	
<b><u>The Place of Diagnostic Testing in Preparing Students For 21st Century University Education</u></b>	168
<i>T. Subahan Mohd Meerah</i>	
<b><u>Hands-on Teaching in Finite Element Analysis to Undergraduate and Postgraduate Students</u></b>	172
<i>Saeid Zahedi Vahid, S. A. Osman, W. H. W. Badaruzzaman</i>	
<b><u>Authors Index</u></b>	177

## Plenary Lecture 1

### Application of On-line Facilities in Producing Human Capital for Malaysian New Economic Model



#### **Professor Riza Atiq Rahmat**

Director of Centre for Academic Advancement and  
Head of Intelligent Transport System  
Universiti Kebangsaan Malaysia  
MALAYSIA  
E-mail: rizaatiq@ukm.my

**Abstract:** Malaysia launched New Economic Model in Mac 2010 to drive Malaysia's transformation into a high income economy by 2020. The foundation of this economy is innovative entrepreneurship. This new model was introduced in response to the current world situation where job market is constantly changing at a very fast rate and stiff competition between countries and between individuals. As Malaysia moves to innovation and entrepreneurship based economy, universities must produce graduates who are very independent, innovative and highly entrepreneurial. In addition, more and more digital-native students whose learning habit very much different from ours are enrolling to universities. This is a convergence of education needs and the new student learning habits that require immersive-collaborative environment, more student initiative, experience-led, and project based instead of course based. To facilitate this learning requirement, on-line facilities are required to enable the students to gain new knowledge as much as possible, to collaborate globally, to synthesis new knowledge or to engage in computer simulations that replicate the real situation.

**Brief Biography of the Speaker:** Prof. Ir. Dr Riza Atiq obtained his B.Eng. (Civil Engineering) in 1980, M.Eng (Transportation Engineering) in 1991 from UTM and PhD (ITS) from UKM in 2002. He started his academic carrier in UKM in 1994 after working as an engineer with City Hall of Kuala Lumpur for 14 years. While in City Hall he developed a transport model for Kuala Lumpur and surrounding area for planning purposes. He has five intellectual properties, three books, more than 100 scientific research papers and 14 innovation awards including one from Geneva, three from Korea and one from IEM. His research is mainly in Intelligent Transport System and learning-teaching. His professional expertise includes bridge design, urban transport planning, urban transport management and sustainable urban transport. His current post in Universiti Kebangsaan Malaysia (UKM) is the Director of Centre for Academic Advancement. While holding the post, he initiated the formulation of 11 policies to transform the curriculum and teaching-learning practices in UKM. His professional qualification includes being a professional engineer (Civil Engineers, Board of Engineers Malaysia) and member of Road Engineering Association of Asia and Australasia.

## Plenary Lecture 2

### The Place of Diagnostic Testing in Preparing Students for 21st Century University Education



**Professor T. Subahan Mohd Meerah**  
Head, Centre for Educational Evaluation  
Faculty of Education  
The National University of Malaysia  
MALAYSIA  
E-mail: [subhan@ukm.my](mailto:subhan@ukm.my)

**Abstract:** University education is not only meant for brightest 10% top of the country students, but open to all that can meet the basic criteria of entrance qualifications. Selection of students into the Malaysian public universities is guided by a quota requirement so as to ensure a representative sample of students based on racial composition of the national population, has access to university education. Thus, those are somewhat deprived of quality education because of this schools locations including marginalized children in the remote areas and handicapped children have a fair chance of gaining access to higher education. As result, the students are not only diverse in composition but also more diverse in terms of their preparation for university education. More and more students are entering universities now than a decade ago. This paper reports on some works to overcome students' deficiencies preparation for university education in the sciences and engineering. The traditional standardized examination results do not provide what student needs were nor their strength and their weakness to face university education. This paper describes the development of diagnostic tests to identify their needs. One of the areas that have been embarked is the development of diagnostic tests such as mathematic and research skills diagnostic tests, prior knowledge tests for university education in various disciplines. The model emphasizes the need for the development of a system in self-diagnostic in tests and interventions programmes, but informally as student is left to decide whether they need to follow self-diagnose interventions programmes or not. The universities have yet to develop a system of a formalized remedial programmes like those practiced in some universities in the USA, even though some research projects have begun which is presented in this paper.

**Brief Biography of the Speaker:** T. Subahan Mohd Meerah is a professor in Curriculum and Evaluation at the Faculty of Education, the National University of Malaysia. He has successfully produced over 40 PhD graduates in his field. He has published over 100 papers in journals and proceedings at the national and international level in his area. He has been a consultant in various agencies including World Wide Fund Malaysia, Malaysian Astronomy Agency and Malaysian Examination Syndicate, Ministry of Education and has collaborative research with numbers of universities in Indonesia. He is a member of Chairman Committee Sub Education Programme IYA for National Space Agency. He is known as an expert and lead resource person in many programs such as in the development of module for inculcating science interests in Space Science for the National Astronaut Program in 2006 and also in the technical committee of Instrument Development for a study on 'Public Understanding of Environment' National Level, collaboration between WWF, Ministry of Education, University Malaya, Universiti Kebangsaan Malaysia & Department of Environment in 2004 and present. Prof. Datuk Dr. T. Subahan also experienced as a Chief of Writing Module for SPACE Science Education Programme in Conjunction with the Launching for the 1st Malaysian Astronaut to ISS. He is a person who is recognized by the Faculty of Education, The National University of Malaysia as Lead Scholar in research. Currently, he is Head of the Centre for Educational Evaluation at the Faculty of Education, the National University of Malaysia.

## Plenary Lecture 3

### Higher Education Research and Gender Inquiry



#### **Professor Ruzy Suliza Hashim**

Head of Project Group of Gender and Sexuality

Head of Project Group for Action Research

Universiti Kebangsaan Malaysia

MALAYSIA

E-mail: ruzy@ukm.my

**Abstract:** In higher education research, students are often made to go the extra mile by going beyond the given syllabus and prescribed textbooks. In an undergraduate course entitled Gender Identities: Malaysian perspectives, students have the opportunity to analyse literary texts from the gender lens. With the premise in mind, the course took on a virtual dimension by allowing students to study gender construction online. This is a strategy to show them the fluidity of gender and the seductive nature of virtual communication where one is not necessarily hindered by face-to-face interactions. In a literature classroom, students are taught the skills to analyse texts in terms of their plots, points of view, narrative styles, characterization, use of symbols and themes. Since literary works are mimetic of the realities of our daily lives, they actually present an excellent opportunity to relate texts with current contexts. Hence, combining the skills of critical analysis with an awareness of gender construction online becomes an aspect of teaching and learning in the literature classroom. To achieve this aim, we incorporated virtual constructions of gender in the design the literature syllabus of a course entitled Gender Identities: Malaysian Perspectives to include recognition of the complexities involved in cyberspace discourse and gender constructions.

**Brief Biography of the Speaker:** Ruzy Suliza Hashim has been teaching at the School of Language Studies and Linguistics, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia since 1988. She obtained her BA with Honours from University of Otago, New Zealand in 1986, MA in Sociology of Literature from Essex University, UK and and PhD (Literature) in 1999 from University of Otago, New Zealand. Her areas of research include gender issues in literature, literature and diaspora, and action research in higher education. She was involved in a number of literary awards as the panel of judges including the esteemed SEAWRITE award. In 2005, her book *Out of the Shadows: Women in Malays Court Narratives* won the National Book Award (Malaysia). She is currently heading the Action Research component at her faculty as well as heading two university grants on Malay revisionary writing, and Malay pop culture and the Malay Unconscious. She is on the editorial board of four international journals.

## Plenary Lecture 4

### Lifting Up the Research University Status by Capitalizing Undergraduates Students' Research Skills



**Associate Professor Kamisah Osman**  
Deputy Director (Curriculum and Innovation)  
Centre of Academic Advancement  
The National University of Malaysia  
MALAYSIA  
E-mail: [kamisah@ukm.my](mailto:kamisah@ukm.my)

**Abstract:** As one of the research universities in Malaysia, The National University of Malaysia has to face challenges in sustaining and lifting up its status. Besides incentives and concerted effort were invested towards research and publication, the university also regards teaching as its main priority, particularly in realizing its vision and mission. In fact, significant amount of funding was allocated to stimulate and encourage innovative teaching among its lecturers. As one of the educational objectives of the Malaysian undergraduates programme, research skills is often conceptualized as comprising critical thinking, organizing ideas, finding information, reading and writing skills, ability to work with numbers and graphs, oral communication skills, ability to ask questions, methodological knowledge, sense of big picture, time management and ability to work with others. Nonetheless, it was found that even though universities are investing considerable resources to equip students with research skills, the attainment of learning outcomes related to research skills is often not as good as expected. This paper will signify the importance of research skills as well as analyzing the current status of research skills among the undergraduates at the National University of Malaysia. It will then propose better approaches to teaching and helping the research universities students of how to learn scientific thinking and research methods in a more effective and deeper way.

**Brief Biography of the Speaker:** Assoc. Prof. Dr. Kamisah Osman is currently the Deputy Director, Centre of Academic Advancement, the National University of Malaysia. After completing her undergraduate education at the National University of Malaysia in 1993, she then taught Chemistry and Physics at one of the secondary schools in Malaysia. Her passion towards effective pedagogy in science towards meaningful acquisition of scientific knowledge and dispositions has inspired her to pursue her studies in Science Education. She then obtained her Masters in Science Education from the Centre for Science and Technology Education, The University of Manchester, UK in 1996 and continued her doctoral study soon after that at the same university. In 1999, she successfully completed her Phd in Science Education and then joined the National University of Malaysia as a Science Education Lecturer in 2000. Currently, she is actively engaging herself in the Science Education Programme, at the Faculty of Education, the National University of Malaysia. Her research interest includes science education, thinking skills as well as curriculum innovation. Besides, she is also immersing herself in maintaining the Quality Assurance and Programme Accreditation processes, not only at the university level, but also national and international levels. She is an Executive Editor of Asian Journal of Learning and Teaching in Higher Education, an Editorial Board member of the Eurasian Journal of Science and Mathematics Education, Science Education Review, Malaysian Journal of Education and Malaysian Action Research Journal. Her passion towards inspiring innovative teaching particularly at the university level has made her one of the key players of Action Research Committee at the National University of Malaysia.