



Invited Paper - New Academia in Student Learning Experience

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Prof. Zaini Ujang is a professional environmental engineer cum scientist who integrates studies on water ecology with engineering systems towards pollution control and sustainability, especially with reference to river rehabilitation in developing countries. His interest in the field leads him to collaborate with leading scholars worldwide, particularly in membrane bioreactor, granulation process and biofouling control. At present he is leading the oldest technical university in Malaysia and South East Asia, Universiti Teknologi Malaysia. He also sits on various boards, such as the Chemical Companies of Malaysia (CCM), Institute of Sultan Iskandar for Urban Habitat and High Rise Buildings, private universities Multimedia Technology Enhancement Operations Sdn Bhd (METEOR) and Chair of Proton Technology Advisory Council, a leading car manufacturer in South East Asia. For his remarkable contribution to the nation, he became the first recipient of the prestigious Malaysia Merdeka Award 2009 for the category of Outstanding Scholastic Achievement. He has been conferred the Darjah Seri Setia Tuanku Muhriz Yang Amat Terbilang (SSTM) award by His Royal Highness Yang Di-Pertuan Besar Negeri Sembilan Darul Khusus in conjunction with the Birthday of the Yang Di-Pertuan Besar Negeri Sembilan on 14 January, 2013. He also has conferred the Panglima Jasa Negara (PJN) award by His Majesty Yang Di-Pertuan Agong in conjunction with the Birthday of the Yang Di-Pertuan Agong on 2 June, 2012. He is the "Tokoh Maal Hijrah 1433H" of Negeri Sembilan 2011. Zaini obtained his B.Eng. (Chem. Eng.) from UTM, and MSc and PhD in environmental engineering from University of Newcastle, UK. He is also an alumni of the Harvard Business School (AMP 177), a Fellow of the Academy of Science Malaysia, Senior Advisor to the Prince Khalid bin Sultan Chair on Water Research, King Saud University, Chairman of the Environmental Quality Council, Malaysia and Fellow of the Institute of Chemical Engineers, UK. He has been registered more than 20 intellectual property rights, published more than 250 technical papers and 27 books.

A New Academia Pedagogic Model for Student Learning Experience

Educational systems in many countries in the Asia Pacific region have undergone significant changes in terms of programmes of reform and restructuring of higher education. Universities of all institutional types are increasingly being challenged by the learning needs, preferences, requirements, styles, and methods of new generations of students, and by the pace and extent of change in the demographics, expectations and patterns of those students. There have been calls from key stakeholders for university educators to pursue reforms that are not only more socially and economically efficient but are also cognizant of the new demands and realities of the knowledge economy in producing graduates or future employees in an increasingly globalized world. For instance, the resolutions based on discussions among key industry players and academicians during ICTLHE 2012 in conjunction with RCEE & RHEd 2012 suggested, among other things, that graduates must acquire generic skills, must be able to create new jobs and create companies with new innovations. Students should be able to relate and apply what they learn in classroom into real world application. Initiatives should therefore be focused on reducing the gap between classroom and real working environment. This has prompted us to re-examine and rethink our pedagogical procedures because it involves more than just transmitting knowledge to our students but also about transforming and extending knowledge. Our understanding of the educational process, and of learning itself, has also changed. We no longer believe that learning is the passive corollary of teaching, or that students should simply absorb material presented in lectures and textbooks. We believe student learning experience should produce both educational and developmental outcomes.

This paper discusses the attempts by Universiti Teknologi Malaysia (UTM) to create UTM's own identity of teaching and learning models, activities, materials, systems and environments based on the *New Academia* concept. Pedagogical Knowledge (PK) and Technological Knowledge (TK) which is under the Technological Pedagogical Content Knowledge (TPACK) framework as well as Student Centred Learning (SCL) underpin UTM New Pedagogy Model. UTM's initiatives to enrich Teaching and Learning (T&L) are based on well-known and best teaching and learning practices which have been proven to be effective. These best practices include Harvard Business School Case Studies (HBSCS), Peer Instruction (PI), MIT OpenCourseWare Consortium (OCC) and MIT BLOSSOMS (Blended Learning Open Source Science or Mathematics Studies). Entrepreneurial Academia is the outcome to be achieved by UTM *New Academia* Pedagogy Model which comprises two modes, namely the Learning Mode (Pedagogy/Andragogy) and the Learning Materials (Digital Resources). We believe that through this *New Academia* Pedagogy Model, we would be able to provide a memorable, meaningful and interactive learning experience for our students.