The interest in engineering and technology education spans a range of topics from the effectiveness of pedagogy and curricula to the practical tools to help improve the general educational environment. This special issue of the *International Journal of Quality Assurance in Engineering and Technology Education* (IJQAETE) presents a composite of papers that was selected after a rigorous review of the conference papers presented and published at the inaugural *International Engineering and Technology Education Conference* (IETEC’11) held in Malaysia. This issue brings together seven papers from a number of international contributors. The papers presented in this edition span a range of topics in illustrating the richness of the field of engineering and technology education.

The first paper by Blicblau and Richards looks at the devolvement of real world project skills for engineering students. In the presentation, the authors argue the major benefits of real world projects to students. Benefits outlined include the improved abilities to formulate, solve difficult problems and gain skills with independent learning.

Next, Mourtos presents a paper that discusses a systematic approach for defining, teaching, and assessing engineering design skills. This paper though drawing from the aerospace engineering arena, clearly shows the necessary skills and attributes for the engineering discipline are both technical and non-technical and come from the cognitive as well as the affective domains. A comprehensive list of skills are outlined in this paper that are considered essential in the engineering disciplines; skills include analytical, open-ended problem solving, a view for total engineering, interpersonal and team skills, communication skills, as well as fluency with modern tools and techniques used in engineering design, attributes, such as curiosity to learn new things and explore new ideas, self-confidence in making design decisions, taking risks by trying new concepts, thinking out-of-the-box, and persistence to keep trying when things do not work.

Berglund’s paper describes a longitudinal change processes working with undergraduate students’ bachelor theses. The aim of this paper was to put forward a curricula redesign that enhances student learning through a pluralist process encompassing team-based learning, collaborative learning, problem-based learning, experiential learning, and situated learning. This paper provides insights on how
“stage-gating procedures and combined group and individual course activities” reinforce learning dimensions for students. The paper articulates the need to redesign the bachelor thesis that aid individuals by: enabling functioning knowledge learning; shaping key generic skills of industrial relevance; and creating understanding-seekers rather than knowledge-seekers.

The paper by Yousef Mai and his co-authors discusses the priorities given by secondary school students and their teachers in Yemen to Science, Technology and Society (STS) issues. The primary focus of the paper is to report the results of the survey that measured the priorities and issues in STS. The outcome of the survey was that human health and disease, water supplies, air pollution, and energy shortages were the most important issues that should be infused in Physics curriculum in Yemen. Implications for research and development in science education are also discussed in this paper.

Next, a comparative study of engineering education and Mathematics education is presented by Ker. The paper outlines the differences in a global perspective with the results showing the positive nature of mathematics in Asian countries. The paper also points to the importance mathematics plays in the foundations of engineering education eluding the premise that a solid foundation in mathematics will result in an easier transition to engineering learning.

Thakaran’s paper highlights the need to include the community based service learning experience in the engineering curricula. He exemplifies the need for this by looking at not only the pedagogy but “the amount and nature of the learning being gained by the participant, the quality, relevance and impact of the service being provided and the quality of interaction between the community and the service learners and the extent to which this interaction is configured and realized as a two-way process that is mutually beneficial to learner and community”.

Finally, Lahkim and Draganova’s paper provides a framework for the integration of leadership development in teaching Information Technology courses by using the Problem Based Learning method. The paper goes on to show some of the capabilities that are essential to leadership. These capabilities include teamwork, communication, critical thinking, problem solving and creativity. This study also indicated that, by using PBL teaching, these leadership skills could be developed and enhanced in the classroom.

We hope that the papers included in this edition will provide a springboard for inspiration to reflect both individually and collectively so as to enhance quality of the engineering and technology education.

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Patrick Keleher’s experience of, and involvement with Work Integrated Learning/Practice Based Learning commenced 25 years ago when he completed a postgraduate Diploma of Teaching (Physics/Mathematics) at the University of Queensland, Australia. Over the 12 years of Patrick’s career as a secondary teacher he was a mentor, supervisor and assessor of pre-service science teachers operating within a Work Integrated Learning/Practice Based Learning model. Over the past 13 years, as a university lecturer and engineering educator, Patrick has led the development of curriculum and the delivery of engineering, physics and environmental courses and programs, in face-to-face, on-line and blended modes, at undergraduate (Director: Built Environment Programs) and postgraduate (Director: Maintenance Management, Environmental Management, Process Engineering Programs) levels with the central theme of a Work Integrated Learning/Practice Based Learning philosophy. In 2009, Patrick undertook sabbatical at the Practice Based-Professional Learning Centre of Excellence in Learning and Teaching (PBPL-CETL) at The Open University, Milton Keynes, UK, to further his Work Integrated Learning/Practice Based Learning research interests and has served as a Fellow of the PBPL-CETL. Patrick is the convenor of the Work Integrated Learning-Special Interest Group within CQUniversity’s Learning and Teaching Education Research Centre (LTERC). Patrick is the lead editor of the 2011 published ‘Work Integrated Learning in Engineering, Built Environment and Technology: Diversity of Practice in Practice’ (ISBN: 978-1-60960-547-6), which showcases a range of contributions from international authors highlighting approaches used in adopting, adapting and delivering Work Integrated Learning/Practice Based Learning strategies for undergraduate and postgraduate tertiary programs with emphasis upon capturing the successful outcomes of industry-university partnerships. Patrick has previously provided operational and strategic leadership as a Head of School (Industrial Ecology and the Built Environment) and as an Associate Dean: Engineering & Built Environment. Patrick’s teaching and learning and research proficiencies are in the areas of Work Integrated Learning/Practice Based Learning, Physical Asset Management, Environmental Management, Control Theory, Futures Studies, Transformational Leadership/Management Strategies and Systems.