Elixirs of Mind....
The Student Learning Journey (SLJ)

Emotional Intelligence (EQ) Awareness

The ID Educational Model in Practice at Department of Industrial Design, TU/e, the Netherlands

Vendor-Integrated Learning Model In ICT Education

"It is more important to make lecturers thoughtful and alert students of education than it is to help them get immediate proficiency."

- John Dewey (1933)
Higher learning institutions around the world are aware that ICT is one of the most constantly changing industries. Learning in this field promises an exciting future by keeping up with technology in which constantly learning new things and developing new skills in various specialisations. Each specialisation is designed for a wide range of job opportunities in the fields of Information Technology, Multimedia and Communication.

Universiti Teknikal Malaysia Melaka (UTeM) is a pioneer in applying the Practice and Application Oriented (PAO) method of Teaching and Learning (T&L) for technical education in Malaysia. The emphases are equally to theoretical and practical aspects of the discipline that is in tune to the Teaching Factory concept. As stipulated in PAO, Problem-based Learning (PBL) and Outcome-based Education (OBE) will ensure that the competencies and skills acquired are relevant to the industries demand. Faculty of Information and Communication Technology (FTMK) adopts these T&L approaches as UTeM initiated them to suit the industries technical needs. A qualification in technical gives a head start in career as reflect with UTeM's quote, "Where great technical careers begin". ICT is a vibrant sector with plenty of opportunities and that is why FTMK's technical-based programs are professionally relevant and intellectually challenging leading to the Bachelor of Computer Science in Software Development (BITS), Interactive Media (BITM), Computer Networking (BITC), Database Management (BITD) and Artificial Intelligence (BITI).

Deputy Minister of Science, Technology and Innovation (MoSTI) Dato' Kong Cho Ha said, "Certifications are a way to prove that a professional had the knowledge and skills to deliver world-class levels of service and also to uphold professional standards within the industry." The implementation of vendor-based certification at the university level can be varies. At FTMK, we chose to incorporate into our curriculum and implement over-and-above concept. Introduced here in undergraduate level are certifications suited for network administrators (CCNA), database administrators (OCA, MCDBA), programmers (MCAD, SCJP, FP) and graphic designers (Adobe) whereas in postgraduate level are CCNP CCIE UML and CISSP certifications. It is likely students to fit into one of those categories in conjunction with their specialised degree. The only certifications that incorporated into our curriculum are OCA for BITD students and CCNA for BITC students.

In view of that, we construct a Vendor-Integrated Learning Model (VILM) in efforts to bridge the knowledge gap between technology and skill sets in today's competitive job markets. VILM emphasis is on the educational process, which put into practice in UTeM especially in FTMK. There are three major learning elements namely ICT Specialisation, T&L Approach and Vendor-Based Certification that aims to provide our students with the knowledge, skills and attitude required to contribute towards and play major roles in a knowledge-based economy. The process of constructing the model is to integrate the three learning elements to produce highly competent graduates.

Fig. 1 Vendor-Integrated Learning Model

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Practice & Application Oriented (PAO)
As defined in Practice and Application Oriented Education at KUTKM published by University Publication (2005), PAO is an approach that requires students to experience the professional practice of their specialisation and to apply their knowledge to solve industrial related problems. ICT specialisation and T&L approach are the two learning elements implemented by UTeM to adopt the PAO education approach. Through those elements the students will only highly trained with practical skills developed by our curriculum. However, the students with such skills will make a difficult process for the ICT industries to employ graduates due to reason they are not internationally certified. Most ICT industries are willing to invest vendor products in running their business operations. Yet, we are still lack of certified graduates specialise in certain aspects of the ICT specialisation.

Knowledge Certified
Vendor-based certifications provide a benefit to the students as a complementary to their respective degree. Learning through the conventional ways will only make the students familiarised with the subject's main theoretical concepts and ideas in applying them to practical environment. In order to fulfill the industries demands, the students have to certify their knowledge by obtaining at least a professional certification from any vendor such as Cisco, Microsoft, Oracle, Sun Microsystems and etc that inline with their area. Without the PAO approach with PBL and OBE, the students will face difficulties in understanding the curriculum set by these vendors due to the assessments developed based on real-world practices and problem-based scenarios.

Product Oriented
While studying only the vendor-based certifications with T&L approach, the students are lack of fundamental knowledge and loose fitting between theories based education and real industry needs and standards. In fact that even the industry requires vendor-based certifications, acquiring a degree from recognised universities are equally important. They are seeking for employment of professional graduates and not product-oriented graduates.

Highly Competence
As a result, when the three learning elements integrate, the academic programs are structured with aiming to deliver highly competence graduates who are fully competent professionals with world perspective and global thinking in the technical fields. These processes are committed not only possess the latest technologies in ICT field, but also other qualities as well, such as strong leadership, communication skills, analytical thinking ability and social competencies. This is inline with UTeM's motto - Excellence through Competency.

Concisely, VILM model is a great way of learning knowledge effectively. Additionally, this type of education has become more prominent with the rising success of the certification industry. This is aligned with UTeM's vision and mission to become one of the most innovative and creative world-class technical universities.

Abbreviations
CCNA Cisco Certified Network Associate
CCNP Cisco Certified Network Professional
CISSP Certified Information Systems Security Professional
MCAD Microsoft Certified Application Developer
MCDBA Microsoft Certified Database Administrator
OCA Oracle Certified Associate
OCP Oracle Certified Professional
UML Unified Modelling Language
SCJP Sun Certified Java Programmer
FP Infosys Foundation Program