

THE FUTURE ENGINEERING WORKFORCE – KEEPING UP WITH TIMES



The explosion of knowledge in this era of IT and globalisation has put a strong pressure on the engineering fraternity to review our definition or understanding of engineering and the manner in which we educate and train our workforce. The exclusive and elitist stance of yesteryears is giving way to a more accommodating and synergistic trend in engineering education and training. The Engineering Council (EC) in the UK has some years back correctly taken the path towards embracing Technology resulting in its transformation into the Engineering and Technology Board (ETB). The IMechE and IEE has recently put into motion a process of marriage with the Institution of Incorporated Engineers, with a high possibility of ICE, IStructE and others coming together initially and joining in at a later date. Worldwide, credit-based qualification systems are making way for outcome-based ones and time-based training systems may be taken over by competency-based training systems. Training is now more client-focused and there would be a stronger emphasis on flexible learning and e-learning.

Despite all these developments, we in the engineering fraternity in Malaysia remain largely loyal to the classical approach to the education and training of our workforce. Yet, on the one hand, as economists normally put it, Malaysian engineers are said to lack competency in advanced design and R&D while on the other hand we are said to be not as highly skilled as our counterparts in Germany or France. While advanced countries enjoys a dual system of engineering education and training, producing scientifically excellent engineers from their universities and highly skilled engineers from their technical institutions, we continue to maintain a single system that produces stereotype engineers of the kind that is "one-size-fits-all" or "jack-of-all-trade". It is highly unlikely that we can achieve both scientific strength and superior skills at the same time unless we agree to increase the duration of our engineering degree programmes to 5 years or more, given the amount of stuff that students have to cover in an undergraduate engineering degree programme nowadays.

Acknowledging the high demand for engineers in the country, some 210,000 engineers by 2010 if the prediction

by MTEN is anything to go by, it is important that we diversify our engineering education and training sector and provide alternative routes or pathways to acquire engineering qualifications. This will provide both the requisite quantity and quality of engineering graduates for the job market. We must strengthen the classical path by directing them towards a scientific bias as recommended by the Malaysian Engineering Education Model Study and at the same time develop and promote the Technical Education and Vocational Training (TEVT) sector which when fully developed has been dubbed as the Alternative or Engineering Technology Path.

The Malaysian Engineering Qualification Framework must be designed to include this alternative pathway to acquire engineering qualifications. Unfortunately the initiative to develop the engineering qualification framework in Malaysia is currently headed by a Medical Doctor based at the Ministry of Education while engineers are divided into at least three separate camps, unable to come together and decide what is best for themselves. The Engineering Technology Path has found many followers in developed countries in recent times and may provide the answer to our demand for a highly skilled and competent engineering workforce. In Malaysia, there is a growing interest in the TEVT sector in the local education and training industry, but IEM has historically adopted a wait-and-see attitude on this issue instead of taking on the championing role.

A new idea or approach does take time to be accepted. At the same time, there would be no shortage of people ready to throw cold water on the idea. However, if developments in more advanced countries are anything to go by, it is not a matter of if but only when the idea would be accepted. It is my personal wish that the Engineering Technology Path idea, originating from a recent study by BEM, IEM and FEIC in whatever variant form as it may have to be, would be accepted at some stage for the benefit of our beloved nation. ■

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