Enhancing Engineering Student Learning through Research

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MANY of our engineering students do not get much exposure to research-based activities, especially through experiential learning. This is probably due to the academic intensiveness of the engineering programs in Malaysia. UCSI however is one educational institution that has decided to adopt a slightly different approach. Engineering students at UCSI are exposed to research-based activities where opportunities for creating and patenting new products and designs are made available through additional learning lessons.

The purpose of this is to enable students to utilise their own knowledge about products that are relevant to the engineering industry. Eng. Dr Mok Vee Hoong, Jimmy, recently shared with us his experience on this topic. He is currently the Dean of the Faculty of Engineering, Architecture and Built Environment, School of Engineering, UCSI. His background is in the area of electrical engineering. He was formerly the Head of the Research Excellence Centre at UCSI and has thus far filed five patents in Malaysia.

In his talk, Dr Mok shared his experience on the way this learning experience is implemented at UCSI. It is generally achieved through after-class informal meetings between the students and faculty members. In order to build interest, understanding and communication amongst these students, several phases are laid out. In the first phase, students are coached or rather "indoctrinated" to have a broader perspective of engineering, i.e. by looking at engineering beyond the textbooks.

This is followed by the development of their social skills. This typically includes having drinks at a coffee shop or by celebrating birthdays together. This is crucial to build understanding, friendship and camaraderie among the team members. Once these phases are completed, the students are taught how to build a sense of commitment towards their projects and team mates.

This is followed by the exposure phase where students are encouraged to not only take part in design competitions but also tackle questions by the judges and visitors. The final phase is to mould them to become leaders by giving them the responsibility to put their findings down on paper and to submit the paper to either a conference or journal as the first author. In general, the students who take part in these research-based activities end up acquiring additional skills and capabilities, especially in building their self-confidence when dealing with technical issues. ■