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Editorial

Inter-Professional Comparisons

THE PROPORTION of engineering educators exhibiting more than cursory interest in pedagogical or other educational aspects, as opposed to involvement in their own research specialization, is indeed very small. As Professor Wald has pointed in an editorial (Vol. 10, No. 6), this is principally the result of institutional promotional policies, and the relative difficulty in assessing the teaching function when compared to research output.

There are many worthwhile research areas in engineering education. One of them is inter-professional comparisons with other similar professions. Many criticisms are levelled against engineering education, mainly self-inflicted by engineering educators, in comparison with other professions. For example, the lack of compulsory internship and the lack of close nexus with the practice of the profession as in medical education, the lack of extension work as in agricultural education, the lack of apprenticeship as in law or accountancy, etc. However, apart from sporadic innovations such as co-op education, the response from the engineering education system has been minimal.

It is first necessary to understand the nature, scope and special features of professions, in general, and the distinctive characteristics of the different identified professions. Professionals are expected to possess specialized cognitive, affective and psychomotor skills which enable them to do their job in a technically, economically, socially and ecologically optimal fashion. They require and are committed to life-long learning, since their professions are characterized by high rates of obsolescence. They form professional societies which serve as clearing-houses of knowledge and experience. It is worth noting that the difference between a layman and a professional is that the latter is also a layman, in all spheres of knowledge except one!

There are practical reasons why the different types of professional education continue to go their different ways. For example, if engineering education wished to model itself after medical education, wherein every medical school has a teaching hospital in tandem, the number of different industrial settings required would be quite unmanageable.

Engineering educators are a special breed. They practise two professions simultaneously, those of an engineer and of a teacher—although most of them would rate themselves as teachers first, and engineers second. Industry also, unfortunately, concurs with this viewpoint. It is also worth noting that for most engineering graduates teaching is perhaps the last resort. Engineering or technology worldwide is rated lower than most others in status and emoluments, and plays second fiddle to science in national policy formulations and resource allocations. Aerospace engineers are wont to remark that a successful space launch is hailed as triumph for science, while an unsuccessful one is condemned as a technological failure!

It is indeed surprising, therefore, that engineering education is doing as well as it is now. It is largely due to the self-introspective initiatives undertaken continuously by engineering educators. The ASEE goals of engineering study, the UK Finniston Report and the accreditation systems in different countries are all evidence of this commitment.

In the context of the increasingly market-driven global economy, engineers will be required to participate in the entire business cycle; thus an integration of technology, management, law, etc., is inevitable. New inter-disciplinary areas are also opening up between medicine and engineering (medical technology, bio-technology, artificial intelligence, etc.). It would be beneficial, therefore, to all the professions if their methods and processes, and strengths and weaknesses are investigated, analysed and compared, with particular reference to their educational systems.

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