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Re-engineering the engineering curriculum for better employability

The change in curriculum combined with compulsory internships and induction programmes for students should equip them with a healthy mix of personal growth and professional progress



Shekhar Sanyal

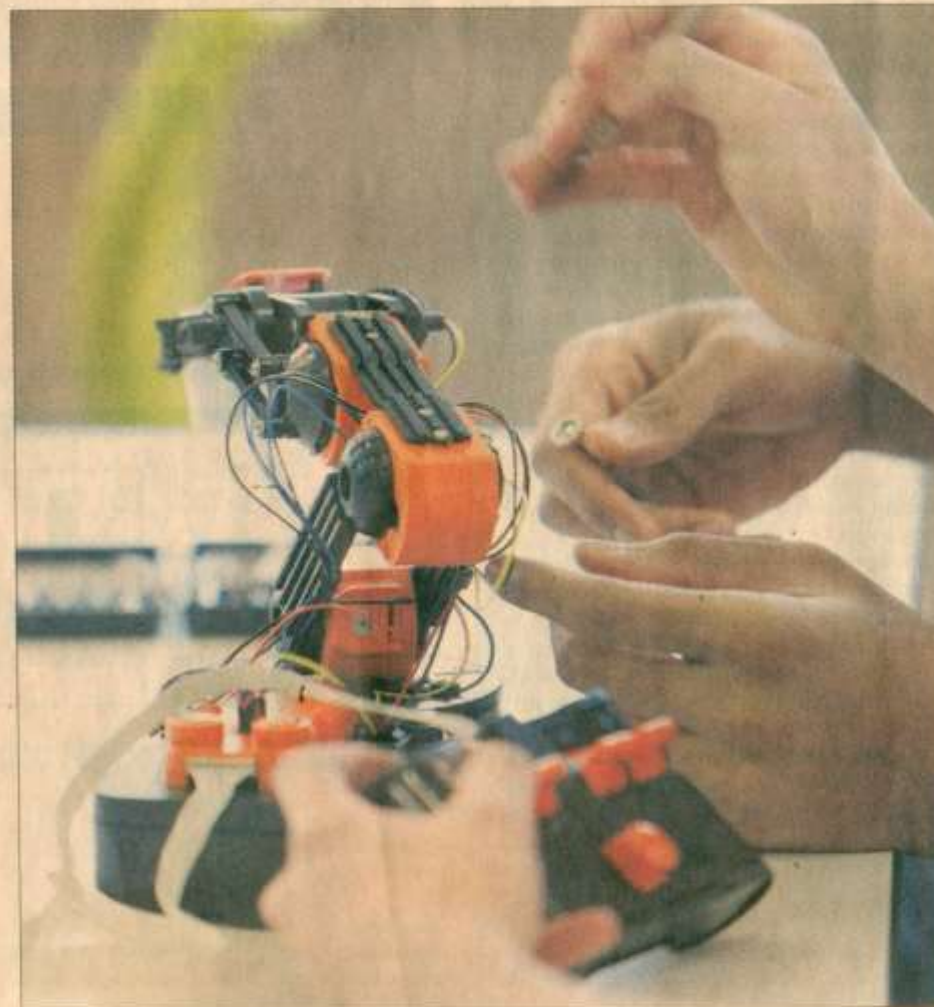
IN APRIL, THE TALENT assessment company Aspiring Minds released the "National Programming Skills Report". Among other things, the report noted that "only 4.77% candidates can write the correct logic for a program, a minimum requirement for any programming job."

In 2013, another Aspiring Minds study found that, in India, "only 7% of the engineering graduates have the skills to handle core engineering tasks."

In 2011, a study by the software industry body Nasscom suggested that 25% of the engineering graduates in the country are employable.

These are alarming statistics. These are not simply numbers, but also point towards a possible catastrophic impact.

The decision taken by the All India Council for Technical Education (AICTE) to revise the curriculum for engineering colleges is, therefore, welcome and much-needed. This should serve to ease the stress levels of stu-



dents and improve the quality of education across the country.

In the past few years, we have seen that a majority of institutions in the country have, more often than not, been focusing on churning out more and more graduates every year. In this process, the general focus

is on theoretical skills with minimum attention being paid to applicability or hands-on skills. The lower employability rate—as has been found out by multiple reports over the years—is attributed to the skills gap in students and one of the reasons of this is lack of practical exposure.

It should be mandatory for every teacher, in each of the technical education disciplines, to undergo an annual refresher course delivered through the government's SWAYAM portal, encapsulating all the major advances in the field of their study

Going forward, with technological advancements including Internet of Things (IoT), artificial intelligence, virtual reality etc, engineering aspirants need to have specific skill-sets to respond to the evolving environment. It is also important to remember that these new technologies have very few or no structured courses. In addition, there are a handful of books that one could refer to in order to get more information on these new-age technologies. The only way to study these is through practical application.

The suggested curriculum should, therefore, focus more on skill development rather than just theory. This change in the curriculum, brought by the AICTE, should address these dire shortcomings instead of paying lip-service by cosmetic variations. For instance, the proposal of mandatory internship will go a long way in giving students clarity on how they stand vis-a-vis industry requirements. Similarly, the introduction of an induction programme will help reinforce the fundamental concepts and the required language skills for technical education.

This combination will encourage students to pursue creative interests, reassess their goals and work towards a future where the two balance harmoniously. The curricula change combined with compulsory internships and induction programmes should equip students with a healthy mix of personal growth and professional progress.

In addition, the curricula should include vocational training for students which will help bridge their skills gap.

Mandatory accreditation is required to make sure that the teaching methodology is focused on outcome and engineering graduates are able to compete at the global level. While the National Board of Accreditation (NBA) is doing a great job, the sheer number of courses to be accredited in India is mind-boggling. If 3,300 institutions were to get accreditation for just five of their core courses, we are talking about 16,500 accreditations across the country. And with re-accreditations every few years, we are talking about numbers that are impossible to meet unless the NBA and the ministry of human resource development (MHRD) also invite global bodies like the IET to support them in their quest.

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These initiatives will serve as a start to the mammoth exercise of curriculum and methodology change that the engineering education in this country sorely needs, and that all these measures will overhaul the outdated curricula of engineering and technical institutions. This is just the start and a lot more needs to be done. While the government has made its intentions clear about the change, the academic institutions and, more importantly, the industry needs to get together to support and advise all the stakeholders in this change. After all, the industry is the final consumer of the engineering talent that the universities produce.

The author is director & country head of The Institution of Engineering and Technology (The IET)