

"Reinventing Engineering Education Post IT Party: Should we have a Paradigm Shift to Core?

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The IT industry, the amazing job engine for the past two decades is heading to a downfall, or optimistically speaking, not likely to maintain the same pace. For the past two decades, the fastest way to increase the income has been to land a job with an IT firm. The industry has provided a ticket to prosperity for millions of young Indians; children of security guards, drivers, and peons catapulted themselves and their families firmly into the middle class in a single generation, something no one would have imagined. Hundreds of engineering colleges mushroomed overnight churning out over a million graduates every year to feed the insatiable demand of the India's IT sector. Now, the party is coming to an end. A combination of slowing demands, rising competition, and technological changes means that companies will hire far fewer people. And this is not a temporary blip-this is the new normal. It is true that the IT industry made a great contribution to the growth of the country and lifted all the boats including the mediocre ones, but this has bred a lot of mediocrity. What impact this mediocrity, a consequence of IT boon has made on the core engineering branches or subjects? Specifically, what impact it has on the students especially from core branches-Civil, Mechanical, Electrical etc.? What could be done to tackle this mediocrity? Can we, the faculty members, engineers, academicians, policy makers and administrators do something fruitful to ensure that the core engineering can regain its charm? All of us have a herculean task at hand-Can we do it? If yes-then how? That's the premise of this paper. It is aimed at presenting the overview of this challenging issue and the impediments that hamper the realization for reinventing the engineering education with a focus on core engineering.

The paper begins with changing perception of students to core engineering branches. Every coin has two sides. Likewise every good thing has bad ones attached to it and IT sector is no exception. This IT boon has lead to changes in the society that has brought a sea of difference in the attitude and approach of students. There is nothing wrong with students' intelligence and intellect level. But the obsession with digital technology and social networking does not leave them with much time or inclination for studies. It has been observed that majority of the students in good institutes now own a lap top which they seldom use for academic/curriculum pursuits. In fact they have become over reliant on lap top and internet that they use it for preparing assignments, Seminar report and B.Tech projects. In some of the branches, the use of books for preparing assignments is an outdated thing now The author's personal interaction with the students during lectures, viva, evaluation etc. has revealed that even in final year of their B.Tech programme they do not know basic computer skills for technical report writing-say writing equations, drawing graphs and editing text in word, although they are quite good at formatting the computers, downloading movies, songs, cracking software, chatting on social networking sites etc.. Now the students don't concentrate, do thorough study, think well and constructively.

Since the students are getting IT jobs through campus placement (through mass recruiters), it has lead to a sense of complacency/self satisfaction amongst the students as well as the teachers-in terms of their approach towards attending classes, studying hard, teaching and evaluation. Even the most mediocre students in a class secures a first class. In fact, the college administration also feels quite happy and satisfied that their students are getting job offers. It is opined that the IT boon has adversely affected the enrollment in post graduate courses (M.Tech, PhD) as the students find the IT job preposition much more lucrative. Even if one enrolls for M.Tech programme many of them leave it in between thereby doing a disservice to the nation. After all the engineering students owe a lot to this nation. This phenomenon has resulted in shortage of faculty members with post graduate qualification, which as per the new AICTE regulations is the minimum eligibility criterion. Even there is a big question mark on their quality of recent crop of post graduates being churned out from private colleges. Because of the poor quality of teachers, engineers graduate by writing essays and stories and not by solving numerical problems.

The point I am trying to hit upon is clear. It has lead to mediocrity. What should be done then? The reforms in engineering education have a long but slow history. Sadly, nothing significant has changed on the ground in last two decades or so. Nonetheless, as some one who has been associated with teaching profession for last twenty years, it is opined that the following solutions/suggestions could be tried. These include: a) depending upon requirement of a branch remove some of the subjects from first year and add important practical oriented core subjects b) increase the duration of B.Tech if subjects can not be removed c) discourage students from joining IT bandwagon blindly, d) switch over to grading system, where only top 15 to 20 per cent get an A grade, bottom 10 to 15 per cent are given F (Fail). e) relax the provision of mandatory 30% non engineering subjects (applied sciences, humanities, other engineering) as given by professional bodies like AICTE, IEEE etc. f) introduce integrated courses and dual degree programmes etc.

Lastly, it is emphasized that there has to be a coordinated effort involving the policy makers, administrators, educationalists, teachers and IT professionals. As a member of academic fraternity, it is strongly suggested that the academia (faculty, directors and educationalist) and other watchdogs like AICTE, UGC, NBA etc. should provide the vision and directions to ensure that the core engineering revitalizes and helps the society in the long run. It is opined that solutions discussed in this paper will pave the way towards making India a force to reckon with in this technology driven global world. Otherwise, the future of engineering education, especially the core branches seems bleak.

“The views expressed in this paper are purely author’s personal opinion and are not meant to offend anyone”.