

Why are Indian Engineering Graduates Unemployable?



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In the article, “National Employability Report - Engineers 2016”, by Aspiring Minds¹, it was said that nearly 80% of the engineers are unemployable even for a profile in software services sector or sales engineering and only a meagre 6.5% and 3.67% are employable in core design engineering and software products.

Sadly in a country that sends rocket to mars at a price of an auto fare² per km and in which 30% of the engineering graduates are first time³ college goers, more than 80% of the engineers are unemployable.

India’s higher education system is in crisis, very particularly, the status of Engineering education. It is broken on all fronts that matter and is disconnected with the needs and aspirations of the students, parents, industry, society and nation. There are three critical dimensions to the problem that needs to be addressed right NOW.

Narrow down approach towards Higher Education

Unlike 20th century, in 21st century, it is expected that a person will change jobs, industries, or even their career path multiple times. But most of the indian higher education institutions are narrowly specialised, and infact, they are getting even more narrowly specialized. While the graduating students of these colleges may have obtained an engineering degree, they become clueless about life and are inept in handling “real life” issues.

What is the purpose of specialised ‘job seeking’ education if most of the jobs of 2020 are not yet defined?

Higher education system appears to be short sighted and inadequate in developing individuals with inner strength to deal with multiple situations in life. They must have good inputs in some of the modern disciplines that may enable students to fetch jobs. In equal measure they must develop individual interests and provide avenues for testing them while graduating.

This is the need of the hour and it is high time that we focus on holistic education.

Faculty Crunch

Nearly 30 to 50% of the faculty positions⁴ are vacant in most institutions. Currently this shortage is not being plugged by people who either have passion or significant experience in the industry even if they are willing due to the antiquated requirements of entry thresholds of our institutions.

In such a situation, though there have been efforts like choice based credit systems⁵ (CBCS) and open electives, they turn out to be mostly forced/restricted electives, due to a faculty crunch, providing no chance for the students to find their passion or to change their paths.

Deteriorating student’s Self - Esteem

In most colleges, the atmosphere is neither conducive enough to learn nor it is supportive enough for students to build their self-esteem. It is this aspect of students that plays a major role in their placements and career and it is highly neglected by college authority. This is based on the following two critical observations that is seen happening in almost every other colleges out there, which is leading to lack of self-esteem among the students.

One is the lack of student's official email ID. In this digital age, a mere college photo IDENTITY (ID) card of a student is not his/her digital identity. The power of an official college email ID for students is significant. There is a huge push for internships from the government these days, but hardly a very few get the ones they deserve. Many times it was because of the communication channel. As an employer, I would prefer looking at an email application for internship, that has come from senthil@xcollege.edu.in, rather than senthil3456@gmail.com or senthil4578@yahoo.com. This becomes even more critical when students apply for studies abroad. Many research proposals might have left unnoticed by professors just because it was not from an official email ID and the same happens even for job applications.

These official email IDs comes at a price, but it is very much worth investing and it is high time that colleges start realising it. Because the success and reach of colleges solely depends on the success and reach of its students. They are the ambassadors of their college. Universities like Ashoka are a standing proof for the same, and they even provide visiting cards for its students, treating them with such a high dignity. Yes, official email IDs are not just IDs. It is the respect and dignity which a college lays on its students and it has multiple positive mirror effects.

The other one is lack of respect of student's time. Recently I have been to many colleges to meet the Principals and HoDs. One scene which is very much common in most colleges is where a teaching or a non-teaching staff enters the Principals/HoDs cabin with ease, whereas the students are made to wait, and wait for long. Why aren't student's time respected and why is a teacher or a staff's time so special when compared to that of student? It is these double standard practises which are killing student's self-esteem. The same goes with guest lectures, where a class of students with free hour is forced to sit in a special guest lecture, citing lack of audience. However special and important the chief guest may be, the free hour belongs to the students and they might have had their own plans and colleges should start respecting student's time and space.

The SOLUTION

It is these above 3 critical dimensions that has killed student's aptitude and attitude, and only these things matter, not just to an prospective employer but even for growth of one's own prospective career. What is the key to overcome the above problem? A meagre workshop on personality development and spoken English could never solve the issue of unemployment, in a time where most of the jobs are undefined and not yet thought of.

Time for Holistic Education

Throughout the major U.S. tech hubs, whether Silicon Valley or Seattle, Boston or Austin, Tex., software companies are discovering that liberal arts thinking makes them stronger⁶. Narrowly defined tech jobs, by themselves, aren't going to be the answer for long-term employment growth.

Thus, in addition to mastering a field or profession, obtaining critical skills, and developing the whole person, it is important to learn about additional subjects that expand our knowledge and the appreciation of the world around us.

Just as in the Universities in US, nurturing a holistic self by offering a holistic education is a way out. Historically, Indian universities such as Nalanda and Shantiniketan also encouraged a broad-ranging education aimed at holistic development. However, over time our education system has evolved in a manner leading to single field institutions for engineering, management, which took away the opportunity for students to discover their interests and passion.

In today's time, many students end up in Engineering without any choice and are forced to complete their degree without any sort of interest. Their passion may lie outside Engineering, in fields like law, painting, cinematography or others. Isn't it the responsibility of our Higher Educations institutions to provide avenues for him/her to explore their passion? These avenues can be created through offering open electives in the field of liberal and creative arts during their course of Engineering.

Introduction of Liberal and creative arts in Engineering, develops in students a spirit of inquiry, critical thinking and analysis as well as verbal and written communication skills. In-class discussions, field trips, presentations, movies and hands-on assignments are some of the ways in which students are exposed to multiple facets of an issue and encouraged to explore.

[MADIEE](#) - Making A Difference In Educational Experience⁷, makes the dream of holistic education in higher education institutes in India a reality. MADIEE curates experiential learning solutions in the form of open electives and short term courses in the humanities and liberal arts, and acts as the platform for passionate professionals to teach the next generation.

In every other college, the value added courses / open electives are still highly relevant to one's branch of study and not OPEN. In today's time, inter disciplinary approach is the need of the hour and we can foster this only when students from different streams interact with each other in an intellectual way and this is highly lacking in our colleges. In 99% of the colleges in India, students have a common subject only in their first semester of study and that's the only learning space where interdisciplinary thoughts (though everything is Engineering) are nurtured. But to face this 21st century, we need more social engineers with multiple facets of thoughts, rather than narrowed down engineering approach. Facebook is not just a result of brilliant coding, it is marrying of coding with human psychology that created FB. Introduction of liberal arts as open electives creates a situation where students from inter disciplinary streams can attend the course together and this will open up several other opportunities. Some of the courses offered at MADIEE are fundamentals of law, the art of doing research, economics and public policy, crucial communications and negotiations, perspectives of art using cinematography, and positive psychology.

Success of MADIEE would create an ecosystem where cost effective medical devices are developed by engineering faculty collaborating with practising medical doctors, where economists, environmentalists, architects, designers and engineers are working towards city planning, with innovative solutions for energy and water challenges. We should remember that Facebook is not just a product of computer programming, but rather it is a culmination of programming and human psychology.

Hence, developing these interdisciplinary approach towards design will improve the quality of innovation and research in higher education spaces across the country.

Gateway to Teaching

However, introduction of liberal arts in Engineering colleges which is already facing the issue of faculty crunch, will bring in further challenges but we have a solution for it too.

MADIEE is also a platform for today's Young working professionals to give back to society in the most noblest of ways, that is, through the act of 'Teaching'. It acts as a direct bridge between the passionate professionals and the aspiring students. Lots and lots of people give back to the society in the form of money, through charity, which is welcoming. But so as to tackle the root cause of the problem, it is not just enough to gift the fish to the hungry person, we need to teach him how to fish, and this is facilitated at MADIEE.

An expert in his/her field of work need not be a great teacher, but at MADIEE, we are more focused on showcasing their passion towards their work. We firmly believe that it is their passion that will inspire the next generation to explore more. It is like, we don't have to showcase the whole movie; all we need is a glimpse of the movie, a trailer or a teaser, to instigate them, and in our case, it will be a workshop or a series of workshops. One of my favourite quotes of Winston Churchill is befitting here. He said, "Personally, I'm always ready to learn, although I don't always like being taught". With huge pile of data and information available online and the growing numbers of MOOC (Massive Open Online Courses), and the

recent introduction of SWAYAM⁸ (Study Webs of Active learning by Young Aspiring Minds) by Government of India, all we need to give the next generation is HOPE and a little tap behind their shoulder, and we can facilitate this by providing platform for passionate working professionals to teach the next generation.

Respecting Students' time and space

Finally, improving the student's self-esteem can only be facilitated by creating a supportive atmosphere at colleges and it is very much a need of the hour. Professors need not be good administrators but they are burdened with additional administrative task and that is affecting the time which the professor should ideally dedicate towards the students. College authorities should bring in more administrators to tackle this issue in the long run and in the short run, I request the principals and HoD of various colleges to allot a special hour or so everyday to meet the students, and I salute the ones who are already doing this. But kindly make sure that the special hour is convenient for the students to come and not when you are available. Students may not be come everyday and may not even come at all, but still there needs to be a time for students and it has to be respected. If their time is respected, soon one day, we will see students engaging in positive conversations with teachers.

Also in this digital age, college development funds focussed on mere physical infrastructure is not enough, and a significant amount should be spent on digital infrastructure too. For a student, his/her digital identity as a student is their official college email ID. Digital India mainly lies on digitally empowered student community and it starts with a official student email ID.

If you are an alumna/alumnus of a college, please do push for the official email ID for the current students. India's and almost every country's strength solely lies on empowering its students and let's strive for it.

Conclusion

India is a young nation. We have 605 million people below the age of 25, while in the age group 10-19, poised for higher education, we have 225 million. A significant number of these are likely to go into engineering. The only way we can reap the advantages of our young demographic dividend is by developing holistic citizens who can take advantage of the opportunities that the 21st century world offers them.

MADIEE envisions to create a world class higher education system in India where every student has the freedom to make his choice of study, and are taught by teachers whom they look upto and get inspired. The mission to help higher education institutions, primarily Engineering colleges, nurture holistic and well rounded graduates who can engineer a better tomorrow.

"If there is one place on the face of the earth where all the dreams of living men have found a home from the very earliest days when man began the dream of existence, it is India"

Romain Rolland, Nobel Laureate, French Scholar

Come on, We had Nalanda University here, the centre of higher learning in the country and the world. Join us to relive our glorious past.

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As [Shail Kumar](#) in his book 'Building Golden India', called for, together let's create the Gray revolution in India

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IT ministry has tested LiFi, an LED-based wireless communication technology, jointly conducted with IIT-Madras and lighting company Philips India. LiFi, or light fidelity, aims to replace WiFi by using light to transmit internet signals with speeds up to 10 Gbps. The technology was reportedly being tested to cover areas that cannot be reached by the existing network.

Worldwide shipments of devices including computers, tablets, and mobile phones will reach 2.32 billion units in 2018, an increase of 2.1% from last year, according to a report by Gartner.