International Conference on Innovative Research in Engineering, Management and Sciences
International Journal of Scientific Research in Computer Science, Engineering and Information Technology
© 2019 IJSRCSEIT | Volume 4 | Issue 9 | ISSN : 2456-3307

Role of Technical Students in Owning Up Their Academics

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ABSTRACT

This research paper aims at examining the possibilities of fostering 'Proactive Ownership' among students of technology, in terms of acquiring knowledge and skills, to apply and enhance creativity and not just focus on scoring.

This is an attempt to enable students to participate in active learning and to share the onus of the teacher in creating an environment of application mind set. This is based on the observation of 3rd and 4th semester Engineering students of New Horizon College of Engineering, Bengaluru for five consecutive semesters.

Keywords : Ownership, Engaged Learning, Contribution

I. INTRODUCTION

The author, a Life skills trainer has witnessed a lack of 'Ownership' among the Engineering Students. Most students of engineering courses have been studying their subjects only for scoring marks, so that, the placement department of the college can create opportunities for them to get recruited. They fail to understand that their learning is instrumental in building the nation technically. They seem to outsource the responsibility of scoring marks to their teachers and that of recruitment to the placement department of the college. The author has come across students who yearn for notes instead of learning, who wait for instructions from teachers in terms of assignments and projects instead of carrying out these proactively. The author has also observed the teachers becoming 'Paternalistic Leaders' in terms of making their students 'Do what it takes' to score marks. This parasite mind set of students has drawn the attention of the author to analyse the 'Role of Technical Students in owning up their academics'

II. RESEARCH

A. Objective

To explore the possibilities of developing a set of students with proactive mind set to acquire knowledge and skills and to apply them.

B. Research questions

Should there be a paradigm shift from 'Enforced teaching' to 'Engaged learning' among engineering students of India?

How to make students shift from 'Get' mind set to 'Give' mind set?

C. Literature Review

Dr.Sitaram Soni, Hod, Engineering and Research, ITM University in an article (1), has made valid suggestion to improve the technical teaching and

learning. He is of the opinion that faculty exchange between institutions in India and also between institutions of different countries would always add a healthy competitive spirit among teachers. He also opines that active participation of faculty in seminars conducted by industries would enhance their learning levels in imparting knowledge and skill. Further, he is of the opinion that Engineering faculty should compulsorily write papers and publish them. His suggestion to continuously assess faculty in terms of their teaching, student interaction and research work would also add to quality learning.

Engineering education is application oriented and students are expected to do what it takes to imbibe this into their learning. Addressing this challenge, Terry Heick in his article, Six Strategies for teaching with Bloom's Taxonomy(2), emphasises on teachers' role in creating learner centric classrooms.

His six strategies include :

a) Using all levels of Bloom's Taxonomy in teaching,

b) Starting at lower levels of Blooms' Taxonomy and gradually increasing the level of thought process,

c) Taking the help of technology to teach at level six of Revised Bloom's Taxonomy,

d) Letting the students take a leading role by bringing their ideas to Bloom's framework,

e) Using Bloom's levels from the lower order to higher order in Project based learning and

f) Giving reward points to students as they move higher in Bloom's levels.

It has been observed many a time that students scoring high marks fail miserably in technical interviews where they have to prove their conceptual knowledge. This gap in knowledge and skill can be addressed by good teaching, say Aabha Chaubey, Bani Bhattacharya and Shyamlal Kumardas Mandal(3) They are of the opinion that good teaching depends on "different aspects related to student and teachers like assortment in the infrastructure of the educational institutions, sociocultural, political and economic factors and the most important is the composition of the class room (gender, social background, ethnicity, etc)". They have categorically stated that, good teaching-learning happens only when the knowledge transfer happens conceptually.

The conceptual learning of technical subjects plays a vital role in shaping an engineering student as a contributor with application knowledge. The new Annual Employability Survey 2019 conducted by Aspiring Minds (4) paints a rather dull picture of this concept. According to the report, 80% of Indian Engineers especially in the IT sector, are not equipped with application skills and the skills that would keep them abreast in the changing world of technology. The report recommends students be given an insight into the job profiles and their own interests to identify the skill gaps and to devise ways to address them. Talking about improving Employability skills, Himanshu Aggarwal, CEO of Aspiring Minds, in an interview with Nisha, Abraham Bijeesh, proposes an approach "to create an ecosystem to help identify employability gaps, provide quantitative and qualitative feedback at various levels be it an individual, institutional, regional or national level to help bridge the employability gap in a constructive manner"

In this regard, a report (5) submitted to the NITI AYOG (Erstwhile PLANNING COMMISSION) New Delhi on the basis of the study supported by the Research Division, NITI Ayog and conducted by S.V. University, Tirupati, comes out with 41 suggestions to check and improve employability of engineering students at different levels. On page 85 and 86, the report proposes 41 suggestions which include measures like, increasing funds to be given to institutions, improving infrastructure, rewarding students and also training faculty periodically.

Furthermore, one can take note of Alok Choudhary's words in his article in Youth Ki Awaz 2 years ago, where he voiced his concerns on the

raising need for corporates to retrain the fresh technical graduates after they are absorbed. He attributes lack of skills in freshly graduated students to the flaws in the design of curriculum and inclusion of subjects that are redundant in industry. He further talks about the option of open electives which would generate interest among students to learn technology the way it has to be learnt.

These discussions do point to the lack of interest to learn technology, the application way, among students, which leads to the skill gap and brings down the employability ratio. The Mission10x framework by Wipro (6) approaches the problem from the angle of innovative teaching techniques and tools that would enable students to

- "Imbibe higher levels of understanding of engineering courses
- Effectively apply the learnt concepts in practical situations
- Develop key behavioral skills required for employability"

This approach is built with a focus on Taxonomy of educational objectives by Benjamin S. Bloom and Multiple Intelligence Theory by Howard Gardner.

This programme is given as Faculty Development Programme across engineering colleges of India with an idea to develop 'Learning Centric' environment among students by creating interest through activity based learning.

Moving away from teachers' onus to create learning centric classrooms, Mckinsey in their work 'Education to Employment'(7) have discussed the skill building problem from the employer's perspective, where they have identified three segments of employers. The first segment which believed in interaction with institutions and students in terms of offering time, skills and money had the privilege of getting the required talent while the other two segments had to struggle for the same.

To sum up the findings from the above survey, it is found that it is the teacher, the education system or the industry which actually takes the ownership of building employability among students through learning centric classrooms. The question, this author wishes to address is, why shouldn't the students, being adults, exhibit ownership and do what it takes to learn technology the way it has to be learnt i.e. to apply, to contribute and to build

III. METHODOLOGY AND FINDINGS

This discussion is based on the author's observation of 3rd and 4th semester students' involvement in completing their technical graduation. The author has come across students whose mind set is just to get the required marks to get through their semesters and to sit for placements. This factor is evident through their lethargic approach to submission of assignments, participation in projects, seeking internships etc., The author has had students asking for notes, important questions, pattern of question paper etc., rather than understanding the concepts. In fact, the assignments are submitted after a lot of procrastination and reminders from the teachers. The preparation time of students for examinations is observed to be 1-2 days before internal tests or examinations. The author has, in fact, run behind the students to make them do their assignments for marks, to take up their tests etc., All the above observations have led to the author's thought process expressed in this write up.

IV. ANALYSIS

Technical Education by most Indian parents has always been perceived as lucrative means to livelihood as against an opportunity to contribute. This mind set of 'Get' over 'Give' which has percolated its way through to the youngsters has resulted in them developing aspirations only to Get and not much in terms of Give. It has also been observed by the author that most of the technical

students select Engineering courses mainly due to Parental pressure, Peer pressure or for the simple fact that they are not aware of the other courses available. The aspirations of such students normally revolve round the translation of their efforts into a lucrative job. The fact that every academic course is designed to enable a student to gain expertise in the chosen area for the main purpose of contribution followed in the second place by rewards, has lost its recognition. The latin term'Quid Pro Quo' meaning in contractual terms, 'Mutual consideration' has been applied here as mere 'Job for marks' than 'Contribution for rewards'. The paradigm shift of technical student from being 'Vidyarthi'(Knowledge seeker) to 'Udyogarthi'(Job seeker) has made the technical education completely marks oriented.

A marks oriented directs his efforts towards successfully getting scores. This score may not always result in comprehending the teaching, mainly for the purpose of application. The interest of a student in getting notes, important questions etc., is always at a much higher level than the interest to learn, apply and contribute. The term 'Learning Curve' translates into a mere marks oriented approach where the student simply 'memorises' the facts that can fetch him or her marks.

At this juncture, the teacher who observes lack of 'engaged learning' will compulsorily resort to 'enforced teaching'. The ownership of developing contributing engineers now lies with the teachers and they start devising ways to make the actual learning happen. They start creating learning opportunities for their students through assignments, projects, workshops and seminars etc., which are again perceived by students as things that are enforced on them. The author has witnessed a behavioural pattern here, where most of the students comprehend such activities as just means to enhance their scoring and resort to last minute copying from friends and internet. The author has also come across a practice where the submission happens only after repeated requests from teachers. Here again, the 'transactional method' of leadership comes into picture where the teachers have to offer the reward of marks or the penalty of not allowing participation in placement.

Upon reflecting on the aforesaid observations, the author is of the opinion that technical students will understand the importance of 'application oriented learning' only when they are made to understand the expectations of the industry from them. These expectations, if understood properly, may push them to shift their focus on being a Vidyarthi before being a Udyogaarthi. In all probability, students will get moulded by the second of the 7 habits of highly effective people as stated by Stephen Covey. They start visualising the end, the job role, the responsibilities thereof and orient their learning from marks to application. They aspire meaningfully and set proper goals for themselves. This, in turn will nurture passion, create 'Ownership' to acquire skill to contribute. The same can be illustrated with the help of the following figure:

Figure 1.

Developing ownership with Industry Interface

When the students are made to understand their contribution area in their professional life, they would naturally do a SWOT analysis of themselves and map their interests to expectations. Students who aspire to work in a specific job role after understanding the relevant responsibilities, would definitely make efforts to understand and learn the subjects with application mind set. This practice becomes a habit as they visualise the end of their efforts and own up their studies accordingly. They become proactive, do not wait for instructions, are curious and do what it takes to reach their goal. Those students, who see a mismatch between

industry expectations and their own capabilities will own up their aspirations to do something else where they can be successful.

V. RECOMMENDATIONS

Students benefit to a great extent by the following activities:

a. Career guidance programmes by industry experts to set expectations from the fresh graduates

b. Effective usage of Centres of Excellence set up by institutions to interact with industry people

c. Internships at the end of every semester – this can go hand in hand with Bloom's Taxonomy i.e. the first internship to make them memorise their responsibilities, the second to make them understand that they need to be revenue generators, the third to introduce them to application of their learning so on and so forth.

VI. CONCLUSION

The conclusion is, through these activities, the students are made to understand the levels at which they are expected to perform, especially the part where they need to be revenue generators for their employer. This is when the skill gap analysis happens, the responsibility and the accountability set in, and students stop outsourcing the work of making them knowledgeable and skilful to others, especially teachers. The behaviour pattern of the students shifts from reactive to proactive. Passion leads to higher levels of contribution.

Now, the question to ponder – at what level should the industries take initiative, to make the students understand their expectations – immediately after 10 or 12?

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