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## INDIA AND HIGHER TECHNICAL EDUCATION: A BIRD'S EYE VIEW WITH PARTICULAR FOCUS ON TECHNICAL EDUCATION

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### ABSTRACT

The drawbacks of the existing technical education and solution for rectifying the drawbacks are discussed in detail. On the basis of analysis of the engineering education sector in India, it has been found that this sector is facing various challenges with respect to existing policies and their implementations. So to improve this sector a revolution is required for development of industrial training, Entrepreneurship development, Advanced laboratories, Placements and the Amalgamation of education with the country's growth. This paper enlightens the various reasons for the derailment in education and also suggests various remedies to overcome the drawbacks.

**Keywords:-** *Engineering Education, Entrepreneurship, Faculties, Employability.*

### 1. INTRODUCTION

Ours is a developing country which has different ideologies and topographies. It is also divided based on languages, caste, color and communities. The same thing you can see in the area of education also. But with given time frame and the opportunities, we have to be on par with global standards so that the problem of employment, entrepreneurship development and wellbeing of human beings are addressed under one platform. Ruhland and Brewer discussed that students beyond their learning, they must also understand the practical things which they get from college days [1]. Based on the study paper where Engineering Accreditation Council (EAC) followed in Malaysia [2], we strongly recommend that one Model of exclusive education which we have mentioned in the methodology will cater the stake holders of parents, education institutions and statutory bodies for higher technical education of students. India and Malaysia differ from politically and also geographically. The other important attributes are populations and resources. The outcomes of education are comparable with Malaysian education.

### 2. HIGHER TECHNICAL EDUCATION IN INDIA AND ITS ALLIED PROBLEMS

As we know that new invention and innovation are not only restricted to the materials and products but also now it is required for the Higher technical education so that the children can learn and earn without any forceful way [3][4]. And the development of our country students can achieve proper and Higher technical education, so that our country will definitely grow up [5][6][7].

#### 2.1. Problem Related To Government Policies Vs Higher technical education

The subject education is neither dependent nor independent of states. It is interdependent of both states and central government. Very often the policies of both mismatch so it is very tough to implement any development work with respect to Higher technical education is concerned. Many times both are ruled by different political parties with different ideologies. This has also become a hurdle in education. In all the states many institutions are run by private people. Though they start with good intention but later on these institutions become sick. At last they are closed. Though the government formulates many regulations to improve the technical education, but they are being diluted in many occasions. So that required result is not achieved at the end. As per the latest survey, many higher technical educational institutions are not fulfilling the basic norms of All India Council for Technical Education (AICTE). The norms are infrastructure, qualified faculty, proper training, and lack of employability skill and so on. These lacunae, more or less remains same in almost all the states. To compare with developed countries, India's position is far below. The reason and remedy for the above issues are given below. All the states should have same syllabus. Right now it is not like that. The existing inspection mechanism should be debated length and breadth and should be modified. The scarcity of qualified teachers is



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not because of their lack of interest but because they get employment once when they complete under graduate course.

### 2.2. Problem Related To Faculty Development Vs Higher technical education

The no. of students getting admission into Post Graduation is less because only the limited students are getting scholarship. To find a solution for this issue the universities can create their own corpus fund getting finance from corporate. In this technique they can admit more students by giving scholarship. As such employability skill is concerned, only 20% of our outgoing students are competent. The rest of the students are just graduates on paper without any employability skill. To solve this problem, the teachers are to be given special training to cope up with latest technology requirements. The communication classes with all the required kits should be made mandatory. But the ground reality is many institutions are not having such communication facility. Then how students will have employability skills? In the case of curriculum for Post Graduation, the vision is to be changed. The students are going for higher technical education only when they do not get job as soon as they complete their Under Graduation. When they opt for Post Graduation (PG), it is understood they are either good for research or for teaching. So the PG students are to be asked to handle classes for UG students so that it will be a training platform for PG students of how to handle UG students and how to teach different technical subjects. This can be done by removing one or two subjects from their PG curriculum. When they complete PG, they will be in a better position to handle UG students and hence the quality of technical education will also improve. The same thing is being followed in the school education and in particular for Bachelor of education students. The quality of higher technical education can be improved by adopting innovative methods.

One such thing is in their UG curriculum, one semester is to be completely allocated for undergoing industrial training. This is similar to house surgeon period in the case of doctors are concerned. This should be made mandatory before they get their UG degree. This training should cover all the aspects of engineering and technology and also hands on training.

### 2.3. Problems Related To Hands on Training Vs Higher technical Education

As majority of institutions are run by private in India, it is tough for the private institutions to arrange industrial visits for the engineering and technology students. This aspect is vital if our aim is to improve quality in higher technical education. But we miserably fail in this area. When we approach corporate in this regard, we are being treated in bad way. We are not getting proper reply in time. By that time we get permission, the current semester is over. To find a solution for this, the apex higher technical education body like AICTE must come out with a suitable solution. In our opinion, both state and central governments who own industries must be forced to allow these types of industrial visits and projects for the engineering and technology students. In addition to R&D and placement cell in the colleges, a separate entrepreneurship and techno innovation club should be formed in all higher technical education colleges. A person in the level of professor should be made responsible for this cell. The function of this cell is to identify the students who are having entrepreneurship skills, motivate them, identify the products and identify the financial agencies etc. This move will certainly improve the quality of education as the students see their life will be bright in the future even if they do not get job.

### 2.4. Problem Related to Accreditation Process Vs Higher technical education

The government must also include in their inspection process entrepreneurship as a parameter, for giving higher in take and for continuing affiliation etc. In Massachusetts Institute of Technology (MIT), United States (US), number of students who are taking up entrepreneurship in a year is considered as a parameter for ranking the educational institution. Many institutions in India are teaching only urbanized entrepreneurship. But instead they must focus rural and remote based entrepreneurship. To come out in detail, village and village based industries are to be encouraged. For example coconut and coconut based industries, perfumes and leather based industries. This will greatly balance the economy of urban, rural and remote masses.

One more aspect we could see in our country is that here a corporate Chief Executive Officer (CEO) cannot exercise any power on financial matter is concerned, though sometimes he has to exercise immediately and independently. In developed countries it is not so. They are fully authorized to take any decision at any time so that growth is not affected. The same is true in the case of educational institutions. The college authorities are empowered to allocate any amount to any project. Persons are also empowered to take any person as Research



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Associate. That is why they could concentrate on research. The tie up between industry and technical institutions are in an advanced stage in developed countries. But countries like India it is in the crawling stage. The pace of growth is also not of worth mentioning. The government must look into this problem seriously.

### 3. METHODOLOGY

The following flow chart steps clearly explain the very basic requirement of higher technical education and this is a topic being discussed all over the world. That is the "EXCLUSIVE EDUCATION" (EE).

It is nothing but as shown in the Figure 1 to find out the hidden skills of students, environment which controls the individuals followed by the field of technical education which requires to be taught and also to be related with the proper training methodologies and lastly placing them in the correct technical position.



**Figure1: Basic requirement of higher technical education.**

A technical field level of survey was carried out on 369 students taken from various branches of engineering and technology across the city of Bhilai which is a hub for educational activities. The number of respondents was arrived by using the following formula:

$$N = [t^2 \times p (1-p)] / m^2$$

Where,

N - Required Sample Size

t - Confidence Level at 95% (standard value of 1.96)

p - Response from the respondents in the Pilot Study

m - Margin of Error at 5% (standard value of 0.05)

$$N = [(1.96)^2 \times 0.4(1-0.4)] / (0.05)^2 = 369$$

The questionnaires are designed on the basis of five constructs.

They are:

Q1. Do you think scholarship is the barrier for the higher technical education?

Q2. Is hand on training necessary for quality of higher technical education?

Q3. You think statutory legislation is required to undergo Project, Industrial Visits, in plant training, Entrepreneurship skills development training etc.

Q4. Do you think your family background has an impact for your higher education?

Q5. Do you think higher technical education is a must for getting a job?

The above questionnaires were circulated among the respondents and data received were analyzed using the Likert scale.

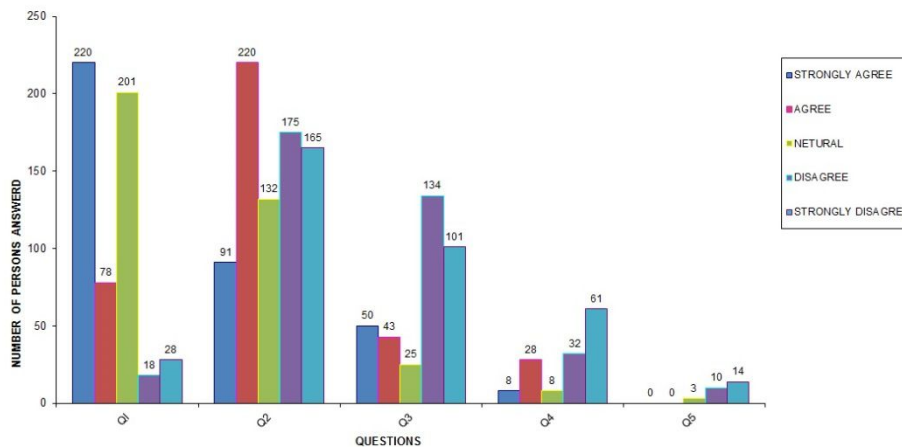


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## 4. RESULT AND ANALYSIS

With respect to the 369 respondents, data's are collected, based on the collected data the analysis was done and result is presented in figure 2. There are various parameters which will affect the higher technical education in India. The various parameters are discussed in detail in the following steps.

1. Firstly, the data was analyzed separately on Likert scale from strongly agree to strongly disagree.
2. Secondly, we have taken the average of two parameters of strongly agreed and agreed.



**Figure 2. Respondents' response against Q1 to Q5 on Likert Chart**

The Q1 data illustrate that 220 students are strongly agreed and 91 students agreed and the scholarship scheme will help them to pursue higher technical education that means 84 % of respondent favour to this construct related to higher technical education.

The Q2 data explained 78 students are strongly agreed and 220 students agreed and this will help them to pursue higher technical education that means 81% of respondent favour to this construct related to "Is hands on training necessary for quality higher technical education?"

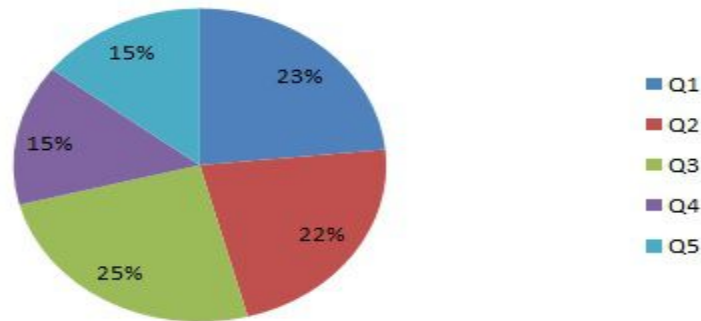
The Q3 data illustrate that 201 students are strongly agreed and 132 students agreed that and it will help them to pursue higher technical education, that means 90% of respondent favour to this construct related to "You think statutory legislation is required to undergo Project, Industrial visits, in plant training etc."

The Q4 data clearly explain that only 18 students are strongly agreed and 175 students agreed but 134 were neutral and 42 students strongly opposed this construct and this will help them to pursue higher technical education that means 52% of respondents favor to this construct which is affecting towards higher technical education.

The Q5 data perceived that only 28 students are strongly agreed and 165 students agreed but 101 were neutral 75 students strongly opposed to this construct and that means only 52% of respondent favors to this construct which is affecting towards higher technical education. An Analysis of average values of the respondents' data is shown below by means of PI chart.



## Avg. of Q1 to Q5



**Figure 3: Pi chart which reflects the various statistics of respondents' responses.**

From Figure 3, it infers that the respondents Q1, Q2 and Q3 have high impacts of achieving the higher technical education (total of 70 % of the respondents). Hence it is concluded that if the first Q1 (that is 23%) and third Q3 (that is 25%), are clubbed, we can infer, almost 50% of the respondents are backing construct Q1 & Q3. So more focus is required on construct 1 and 3. It is also important that this study is made in Bhilai where both urban and rural people are coming for higher technical education. The same is true in the case of our country is considered. The city of Bhilai is located in a region where both urban and rural students come for studies not only for higher technical education but also school education. So this study is of much significance with respect to higher technical education and it will be good for the policy makers to follow these recommendations.

## 5. CONCLUSIONS

The following recommendations are drawn based on surveyed data; it may be of much useful for the readers, researchers and social welfare peoples of India.

Seventy percentages of the students are of the opinion that higher technical education quality will improve provided that, hands on training, Project, Industrial visits, in plant training and entrepreneurship development training are given due attention. And also scholarship to the needy will also motivate the students to opt for higher technical education without much burden to his/her family.

Fifteen percentages of student's are agreed that family background has an impact on their higher technical education. To solve this kind of problem the state and central governments must focus on free higher technical education with suitable stipend.

Remaining fifteen percentages of students' thoughts are a clear indication that studying higher technical education is useful for them for getting a job.

Based on the constructs Q1 to Q5, it is concluded that reflection of students' thoughts are for higher technical education with suitable training programs, involving in live developmental projects and free higher technical education with stipend.

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