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Present Status of Technical Education in India

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Introduction

Technology is perhaps the gift of the present generation to the world. Imagine a world without internet and Cell phone, there would just be vacuum. Technology has shrunk the world and brought everything within our reach. Be it travel or communication, everything seems to have become so localized and familiar. The making of global village is perhaps the most valuable contribution of technology and the concept is bought to strengthen with coming time.

The history of imparting formal technical education in India can be traced back to Mid. 19th century; however, it got momentum in 20th century after the constitution of Central Advisory Board of Education in 1943. After independence 1947, the Government of India felt major concern about the development of technical education and set up All India Council of Technical Education (AICTE) by a parliament act in 1987 to bring new boosting to economic and industrial development.

As envisaged in the Act, AICTE controls and formulates new policies. It advises the Government for the planning of the technical education in the country. It operates the scheme of National Manpower Information System (NTMIS) in collaboration with the Institute of Applied Manpower Research (IAMR), New Delhi as a lead centre. It has set up 21 nodal centers in various technical institutions and other departments all over the country. The objective of the scheme is to generate a database and supply of technical education manpower. It is to ensure and maintain the standard of technical education in the country.

AICTE advises the Ministry of Human Resources Development on all academic matters related to technical education including norms, standard, model curricula, infrastructure model facilities and structure of courses.

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For the purpose of maintaining academic standards and ascertaining the financial needs of Technical Institutions of Universities, the council may conduct an inspection of any technical institute and university. On the basis of the inspection report finalized after discussion with that technical institution or university, it can issue the directions to make up the deficiencies within stipulated period.

Importance of Technical Education

The expansion of the technical education system is directly linked to economic growth and development of a country. A rapidly expanding technical education system is considered as an indicator of rapid economic growth and development. Although there might be other factors also which influenced the expansion and growth of the higher education system, yet technical education was considered the most important component for innovative technologies and human resource development.

Keeping this in view IIT'S and State Engineering colleges in fifth and sixth decades of 20^{th} century were established and that could be taken as a testimony to the vision of policy makers of that era for achieving excellence in scientific and technical education and research.

The planners also realized that tremendous efforts were required on technical education front to transform India into a developed nation and consequently, technical education in India has experienced unprecedented growth during recent years, more particularly after liberalization of economy in 1991.

In the technical education our country as on 31st July, 2007, has 4707 degrees institutions and 1766 diploma polytechnics with an intake capacity of 8, 42,232 and 3, 33,296 students respectively. It includes all UG and PG academic programs approved by AICTE. Further, for the session 2007-08 another 467 institutions with additional intake capacity of 96551 students have been given approval, thus, taking the total capacity to 12,72,079 students for degree and diploma programs (AICTE, 2007)

No doubt the intake in undergraduate technical education has increased many folds, but the quantitative improvement has not resulted in simultaneous improvement in quality. The concept of quality in education is a relative concept and it lies in the perception of consumers. Quality is a degree of excellence and an attribute of values. In technical education the quality is seen in terms of two objectives i.e. 'fitness for purpose' and 'value for money' (Powar 2000).

There are performance indicators to measure the quality of technical education. These are teaching learning process, research and extension activities, physical infrastructure, organization and administration, students' support system, innovations and creativity and other healthy practices (Stella, 2000).

Higher education is considered as an essential ingredient for economic and social upliftment of the people. Hence, any quality control must reflect on the aspirations of various beneficiaries. So there is an urgent need to make technical education more relevant and effective to achieve the desired economic and industrial growths.

It is opined that the teachers who teach engineering courses have enormous responsibilities in producing competent and dedicated engineering graduates who would be able to experience a smooth transition from the college environment to corporate life. However, the onus of maintaining a vibrant academic standard of technical institutions lies with the central and state governments.

It is disheartening to find that many new institutions set up under the self-financing mode have not created adequate infrastructure or made available to the students minimum basic teaching and learning facilities. The unprecedented expansion of technical education has created scarcity of adequately trained and qualified faculty to impart technical education effectively. In addition to this the technical education system has also

faced a threat from the aggressive marketing of foreign institutions in India. Our young students are being lured by these institutions which are not even recognized in their own country.

Another reason for non-availability of qualified faculty is the appointment opportunities in the information technology sectors. Consequently, postgraduate education in engineering has become less attractive and that has resulted in poor enrolment to postgraduate and research in engineering programs. This is not only in numbers, but also in the quality of those who seek higher studies in technical education.

This has caused scarcity of quality man power for R & D departments in industries and technical institutions. This problem has further aggravated due to the fact that many multinational institutions have set up R & D centers in India and have recruited many bright Indian professionals from Industries and Educational Institutions by giving higher pay packages.

Till 1990 the expansion and growth of the technical education in India was a Government prerogative; however, after the introduction of economic reforms and globalization of the economy the Government allowed privatization of technical education. Consequently, there is a mushrooming growth of self financing technical institutions during the last 15 years. Most of these institutions are being opened and run by Industrial and Business houses and their priority is profit making. Only a few private institutions are taking care of quality education and these are equally good as IIIT'S and NIT'S.

In addition to the above the privatization of technical education has brought a number of anomalies in the technical education system. The most glaring anomaly is the disparity in fees system and that has made technical education costly and beyond the reach of the poor students.

At the same time the quality of technical education has suffered in view of the fact that many private institutions lack of necessary infrastructure and facilities.The Government has tried its best to regulate the fee structures and quality of education through AICTE, but the problem persists and the effectiveness of AICTE and regulatory bodies in maintaining the quality of technical education is under cloud and debatable.

According to National survey of 650 engineering colleges in India by Aspiring Minds, more than 80 % of engineering were unemployable in 2015. Another survey of management graduates, excluding those from the top 20 schools, conducted by ASSOCHAM in 2016 tells that only 7% were employed. Only a few of 5500 management institutes impart quality management education that helps their graduates to get jobs though most of them earning less than 10000 a month. Why are most institutions of higher learning in such a pathetic condition?

Expansion and Growth of Technical Education

Despite the above mentioned deficiencies, there is an exponential growth in technical education in India during the last two decades. Today, India has the second largest number of engineering students in the world. Indian scientific, industrial and technological development particularly in space, nuclear and missile technology, information technology, communication and computer engineering have earned world recognition and India has emerged as a global power to reckon with.

The historic achievement of landing of Chandrayan-1 and the moon impact probe on the lunar surface with the Indian tricolor pointed on it are great achievements. These can prove great inspiration to our students in taking innovative projects with creative ideas. The teachers should use these achievements to create enthusiasm among the technical students by motivation and technical inputs. The entities as much as civilization, education, industry, culture, living standards, economy, etc. cannot remain unaffected from the changes elsewhere in any part of the universe.

Due to the advent of the information technology globalization is the norm and the survival in the global context depends on the advancement in the technical education. Thus, in our country, which is at the forefront of the developing nations, the policy makers should formulate the technical education to suit the immediate requirements having considerations to the future needs of the nation also.

Conclusion

The potential employers from industries and corporations can play an important role in maintaining quality of technical education. At present there is no frame work for formal interactions between Industry and technical institutions. The curriculum is framed with out consideration of the industries requirements and that leads to mismatch between industry requirements and institutions output causing frustrations to fresh graduates. Hence an interface between industries and technical institutions is imperative to ensure the quality of technical education and it needs to be formalized at national level.

The technical institutions should give representation to the persons working in industries on decision making bodies. The institutions should also tie up with industries by offering them services in areas which can be imparted by the faculty members. On the other hand the industries should provide the facilities for training to students of the institute.

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