

Technical Education in India – Present Status and Quality Assurance

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Abstract. Technical Education is one of the most noteworthy parts of Human Resource Development range with incredible potential for enhancing items and administrations and for adding to the national economy and improving personal development of the individuals. Quality issues in technical education are significant perspective since it bears an immediate effect on the improvement of the education procedure.. The successful future for Higher education institutions depends on Quality assurance in Technical Education in the country. There is a strong move globally towards internationally recognized quality assurance processes. The accreditation of academic programs is very much essential in order to maintain the quality and the status of technical workforce in the country. The Govt. of India and state governments have been making constant efforts for qualitative improvement and quantitative expansion of the technical education system consistent with rapid changes taking place in the socioeconomic, industrial and technological scenario.

Keywords. Technical education; National economy; Quality assurance; Accreditation

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1. Introduction

Quality issues in technical education are very important aspect since it bears a direct impact on the improvement of the education process. Quality is not a science; it is a way of thinking. The development of technician education before independence till 1947 was slow and haphazard. Constitution of the Technical Education Committee of the Central Advisory Board of Education (CABE) was done in the year of 1943. Preparation of the Sergeant Report was done in the year of 1944. Formation of the All India Council for Technical Education (AICTE) was done in the year of 1945 by the Government of India. AICTE is responsible for planning, formulation and maintenance of norms and standards, quality assurance through accreditation, funding in priority areas, monitoring and evaluation, maintaining parity of certification and awards and ensuring coordinated and integrated development and management of technical education in the country.

2. Progressive Development

2.1. Literature Review

Since the mid-eighties, with proliferation in industrialization and financial development, engineering and technical education in India have been growing faster than anyplace else in the world, and India currently has the second biggest number of graduates on the planet [1]. To cater the need of the rapid growth in industry private engineering colleges and universities have already started to come in the picture in larger number. Unfortunately, most of them fail to keep the level of standard intact due to policy and also some in lack of well-trained educators.

2.2. Present Scenario

Engineering education in India has got impulse with the set-up of All India Council for Technical Education (AICTE). The Ministry of Human Asset Development takes into account programs at undergrad, postgraduate and research levels that incorporate courses in building, innovation, the executives, engineering, drug store, and so forth. The specialized instruction is imparted by chief establishments containing:

- Indian Institutes of Technology (IITs) – 23 Nos.
- Indian Institutes of Management (IIMs) - 20 Nos.
- Indian Institute of Science (IISc), Bangalore
- National Institutes of Technology (NITs) – 32 Nos.
- Indian Institutes of Science Education and Research

The number of AICTE approved institutes that offer Engineering courses in India is – 10987 around 5502 institutes in India offering diploma courses in engineering as per the data published in AICTE portal.

2.3. Need of Quality Culture in Technical Education

The status in Table-1 clearly suggests why quality culture is an important aspect in Technical education. From the inception of technical education, it was always inclined towards employability orientation. Hence placement is always a major parameter to gauge the gradient of the technical education, as seen in Table 2. Though there are other parameters too to measure the performance, yet placement scenario speaks louder than the rest. Not only that also the rate of clearing examinations like Graduate Aptitude test in Engineering (GATE) after graduating is a matter of serious concern. In 2017, number of students appeared in GATE is 922,167 and cleared 129,149 which was only 16% of the appeared candidates (see Fig. 1).

2.4. Objectives of Technical Education System

The primary and secondary objectives of the technical education system may be sequentially enumerated herein below:

1. To develop and arrange and have a decent notoriety.
2. To improve satisfaction of the stakeholders.
3. To utilize the inventiveness of personnel for by and large establishment improvement.
4. To give career improvement chances of employees.
5. To provide job satisfaction to all levels of employees
6. To be an example to other institutions of same category.
7. To look after modernization by removal of obsolesces at all levels.
8. To undertake Quality Assurance.

2.5. Institutional Accreditation and Internal Quality Assurance

There are various factors which directly or indirectly influence the effectiveness (quality) in technical education under the following broad heads viz.,

1. Administration

2. Infrastructure
3. Teaching Effectiveness
4. Students
5. Interaction with Industry and Society
6. Extra Curricular Activities
7. Research and Development

Internal Quality Assurance Cell has to be established at institute level for overall quality enhancement and sustenance.

2.6. Present Quality Problems in Technical Education In India

To improve the quality and standard of technical education system particularly development and curriculum development plays an important role. The present technical education system of the country is not able to keep pace with the industrial development and technological advancements. The problems/issues are identified that were hampering technical education in the country, as listed here:

1. Shortage of competent and in quality.
2. Practice of engagement of temporary (ad-hoc) or daily teachers is hampering quality of education.
3. Large drop-outs and failure rates.
4. Fast out of date quality of educational programs and course substance because of rare update and much deferred reaction to market demands.
5. Retention of faculty due to promotion policies, absence of incentives for quality performance, and non-development policies in most institutions.
6. The teachers are straightway recruited without assessing their ability to teach.
7. Most of the self-financed institutions are not offering salaries as per AICTE.
8. The institutions do not pay adequate attention to faculty development.
9. Significant efforts are not made to self-learning skills or industry needed “soft skills” to the students.
10. Knowledge and skill acquisition by students thereby lowering their employ ability (only 25% at present).
11. Close links need to be fostered between technical institutions and industry.
12. Lack of Good Administrators
13. Problem of Practical Field Work and Laboratories
14. Lack of co-operation between Government, Industry and Educational Institutions
15. Basic specialized instruction arrangement must be confined all through the nation
16. Improvement in institutional infrastructure
17. Improvement in teaching methodology
18. Uniform examination system
19. Mismatch between Qualifications and Industry needs.
20. Legitimate use of library benefits by the staff and understudies.
21. Lack of monitoring of educational programmes

There has been a rapid growth in the number of private self-financed institutes across India in the last 20 years [2]. The significant changes in supply and demand make it increasingly important to ensure that technical education systems and institutions are effectively and efficiently governed and managed to meet the needs of industry and society.

Table 1. Overall status in engineering education in India in last 3 years available

Total Technical Institutes	Academic Year	Intake	Enrolment	placement
10426	2018-2019	3392965	1840693	765043
10400	2017-2018	3552377	1840693	714864

10365	2016-2017	3702582	1840693	722517
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Table 2. Overall status in engineering institutions in India last 3 years available

Year	Total Institutions	New Institutions	Closed Institutions
2019-20	10987	912	78
2018-19	10426	548	53
2017-18	10400	548	53

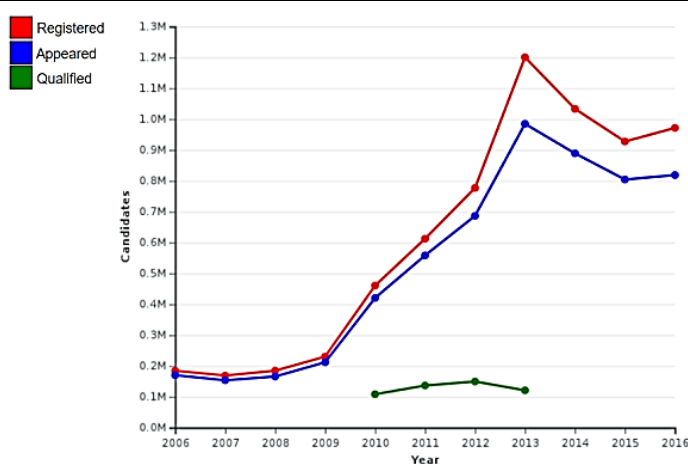


Figure 1. Number of students appeared, registered and cleared GATE

4. Conclusion

The primary objectives of technical education is to maintain quality and appropriate standard. The institutions need to develop a standardized approach to most aspects of quality assurance for engineering programmes. Each engineering college and polytechnic ought to characterize their quality strategy and understandable their duty to accomplish quality in the entirety of their exercises and execute the strategies properly.

Conflicts of Interest

The authors declare that there is no conflict of interest.

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