Efficacy of Indian Education Policies: A Study of Private Engineering Education in Delhi NCR

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ABSTRACT
Our education sector is at a vital stage of growth. Engineering is the second most sought after discipline and enrolment in engineering accounts to 17.8% of the total enrolment in higher education. The number of engineering institutions doubled in merely five years, from 1,510 in 2006 to 3,390 in 2011. The main component in the significant expansion in engineering education is private institutions, which accounted for about 94 percent of engineering institutions in 2011. But with the expansion of the private engineering institutions there are numerous threats associated. The existing regulatory framework constrains the supply of good institutions, excessively regulates existing institutions in the wrong places, and is not conducive to innovation or creativity in higher engineering education. Thus, we can say that the higher engineering education system seems to be plagued with several problems – inadequate number of institutions to educate eligible students, poor employability of the graduates produced by the universities, low and declining standards of academic research, an unwieldy affiliating system, an inflexible academic structure, an archaic regulatory environment, eroding autonomy and low levels of public funding. The study is a summative evaluative research wherein, the detailed analysis of the policies/reforms taken by the government in the higher education sector with the special focus on the engineering education. The aim of the study is to critically examine the policies in the area of engineering education, study its impact and suggest the corrective measures so that there is an optimum utilisation of available resources (allocated funds by the government, students, faculty, infrastructure, etc) for the best interest of the stakeholders viz. students, faculty, administration, institute, government and society. The study is based on primary data (semi-structured interview with the heads of the engineering institutions) and secondary data (reports of committees and various commissions). The paper is thus a critique to the existing policies in the field of Indian Higher Engineering Education system and suggest ways to make it affordable, accessible and of best quality.

Keywords--- Policies; Efficacy; Engineering Education; Private; Legislations

I. CONTEXT OF STUDY
Government of India introduces a handful of policies and reforms in the area of higher education almost every year. Post independence issues related to higher education has been discussed in the five year plans every year, there have been many committees working on issues of higher education. The study is a summative evaluative research wherein, the detailed analysis of the policies/reforms taken by the government in the higher education sector with the special focus on the engineering education. The aim of the study is to critically examine the policies in the area of engineering education, study its impact and suggest the corrective measures so that there is an optimum utilisation of available resources (allocated funds by the government, students, faculty, infrastructure, etc) for the best interest of the stakeholders viz. students, faculty, administration, institute, government and society. The study is based on primary data (semi-structured interview with the heads of the engineering institutions) and secondary data (reports of committees and various commissions). The paper is thus a critique to the existing policies in the field of Indian Higher Engineering Education system and suggest ways to make it affordable, accessible and of best quality.

1.1 Literature Review
a. Government Policies and Higher Education
The Indian higher education sector has grown many folds from merely boasting of 28 universities and 578 colleges in 1950-51 to having over 500 universities and more than 25,000 colleges at present. Though the statistics showcase bolstered participation and investment from both the public and the private sector, there still exist deficiencies in the supply of higher education as compared to its demand due to the burgeoning population of India and escalating demands for graduates and technical skilled workers. This has forced the government to look over its strategies and come up with better models to incentivize more investment and participation in this sector [1].
Higher education has been an effective investment for both individual mobility and social development. As its returns are expected to be positive and high returns, investment in higher education can easily be justified. Based on these estimates, further investment will be attracted in the domain of higher education. It is in this logic, the political economy of higher education has logically been rationalised in our times both in terms of demand and market. However, one cannot shy away from the consequence of higher education for instance, alarming rate of unemployment, social unrest, slow economic growth and economic disparities. To normalize this pervasive situation, careful policies in education, perhaps, is effective tool. [2]

1.2 Objectives of the study
The objectives of the study are as follows viz.:

a. To study the historical evolution and trends in growth of private engineering education
b. To critically examine the government policies and reforms in the area of engineering education
c. To study the impact of government policies and reforms in engineering education.
d. To suggest the corrective measures so that there is an optimum utilisation of available resources (allocated funds by the government, students, faculty, infrastructure, etc) for the best interest of the stakeholders viz. students, faculty, administration, institute, government and society.

1.3 Methodology and Sampling Techniques
The type of data relevant for the purpose of study was of primary as well as secondary in nature. The primary data was collected through a structured interview schedule from the respondents, who were the director of the institute. Interviews were conducted from 11 respondents in person. The secondary data was collected from the reports of AICTE, Ministry of Human Resource Development, reports of private as well as government agencies dealing with higher and technical education.

II. AN OVERVIEW OF PRIVATE ENGINEERING INSTITUTIONS IN INDIA

Engineering education is the second most preferred area of study after management with expectation of lucrative career option in future. It is supported by the fact that Indian Engineers have contributed significantly to the economic and technological development of many foreign countries, with their demonstration of skill in almost every area of engineering and research from past.

Epic (1000 B.C.) and Vedic Period (prior to 500 B.C.) had shown traces of technical skills in the area of carpeting, smithy, weaving, and foundry as part of education in India. During the medieval period there was an increase in the dependency of technical education and it is evident from the remains of the archaeology.

Engineering education formally began in the pre-independence era and continued post independence, the boom in the engineering institutions (especially private engineering institutions) took place post 1980s. And till date the demand for engineering education (both government and private) is showing an escalating trend. In order to have a clear picture of the mushrooming growth of engineering education it is imperative to start with the history of the same.

2.1 History of Private Engineering Institutions in India

Engineering Education in India was started during the British Era with India’s first engineering college, College of Engineering, Guindy (Chennai) in 1794. The British started the first technical education program in India with training to overseas on construction of roads, bridges, docks, etc. The lower grade technicians were also trained to manage equipment used for army, navy and other technical establishments for maintenance of British Empire. The instructors for training schools were mostly British and the lower grade instructors were hired from the local population [3]. There were major institutions of engineering education, which provided technical and engineering know-how to the students prior to independence in major cities of India, and they are illustrated in the table.

![Table 1: Technical schools and colleges in India pre-independence](source: Compiled from various AICTE and UGC reports)

AICTE was established on 30th November 1945 by a resolution of the Government of India on the recommendation made by CABE [4]. Post establishment of AICTE and recommendation of Sarkar Committee resulted in setting up of five Indian Institutes of Technology (IIT’s) at Kharagpur, 1950; Bombay, 1958; Kanpur, 1959; Madras, 1960; and Delhi, 1961. The government then started fifteen Regional Engineering Colleges (RECs) from 1959-1967 at various cities in India like Jamshedpur, Durgapur, Calicut, Allahabad, Bhopal, Kurukshetra, Nagpur, Jaipur, Rourkela, Surat, Silchar, Warangal, Srinagar, Surathkal and Tiruchirapalli.

Some private engineering colleges were established in various parts of the country such as National Institute of Engineering, Mysore (1946); B.M.S. College of Engineering, Bangalore (1946); Birla Institute of Technology, Mesra, Ranchi (1955); Thapar
Institute of Engineering and Technology, Patiala (1956); Manipal Institute of Technology, Manipal (1957); Madhav Institute of Technology and Science, Gwalior (1957); M.S. Ramamiah Institute of Technology, Bangalore (1962); Sardar Patel College of Engineering, Mumbai (1962); S.J. College of Engineering, Mysore (1963); R.V. College of Engineering, Bangalore (1963); Birla Institute of Technology and Science, Pilani (1964); Hindustan Institute of Technology, Chennai (1966) and Dharmsingh Desai Institute of Technology, Nadiad (1968) etc.

In 1970, India had a total of 139 engineering institutions, and only four of them were private. However, since 1980s due to rapid industrialization and economic growth, engineering education in India has been developing at a faster rate. After liberalization, there was enhanced demand of engineering manpower and the government institutions were not able to fulfill it which led to the historic decision of privatization. The Private Universities (Establishment and Regulation) Bill was introduced in 1995 in the Parliament. Passing of the bill gave boost to opening of many private engineering colleges. By the end of 2000, number of engineering institutions rose to nearly 1,400 out of which about 200 only belong to the government. Growth of private engineering colleges continued even beyond 2000. Since 2006, there has been a continuous growth in the number of engineering institutions and the intake capacity of students in the institutions which is due to soaring demand for engineering discipline. However, in the year 2008, Ministry of Human Resources (MHRD) announced to open eight new IITs under XI five year plan in different states of India and upgraded IT BHU as IIT to fulfill the demand of technical manpower of the country which makes the total number of IITs to sixteen. We have witnessed the growth of technical institutions in the country and it is demonstrated in the following (table 2).

### Table 2. Growth in number of Technical Institutions with the intake capacity

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Technical Institutions</th>
<th>Intake of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-07</td>
<td>151</td>
<td>558986</td>
</tr>
<tr>
<td>2007-08</td>
<td>168</td>
<td>653228</td>
</tr>
<tr>
<td>2008-09</td>
<td>218</td>
<td>84168</td>
</tr>
<tr>
<td>2009-10</td>
<td>297</td>
<td>101106</td>
</tr>
<tr>
<td>2010-11</td>
<td>322</td>
<td>131494</td>
</tr>
<tr>
<td>2011-12</td>
<td>356</td>
<td>148504</td>
</tr>
<tr>
<td>2012-13</td>
<td>389</td>
<td>169772</td>
</tr>
<tr>
<td>2013-14</td>
<td>394</td>
<td>165496</td>
</tr>
</tbody>
</table>

(Source: AICTE reports)

2.2 Geographical Distribution of Private Engineering Institutions in India

Alongside, mushroomed growth of private engineering colleges in India continued with almost every state having at least one private funded engineering institution.

The (table 3) demonstrates a clear picture of the technical institutions (both government and private) in the states of India. The highest number of government aided technical institutions is in Andhra Pradesh and those run by private organizations are 852 in Tamil Nadu followed by 763 in Andhra Pradesh. There are states especially the north-eastern states like Mizoram, Meghalaya, Arunachal Pradesh, Sikkim have either 1 or no technical institutions.

Regional imbalances in engineering education arise due to natural clustering of institutions of higher education in and around urban areas. This leads to mobility of students, evident from the fact that students from Bihar and North-East states disperse to engineering institutions in Delhi, Bangalore, Mumbai and other states.

### III. AN OVERVIEW OF PRIVATE ENGINEERING INSTITUTIONS IN DELHI NCR

There are in total 124 private engineering institutions in Delhi NCR with New Delhi comprising 12 institutes, Noida and Greater Noida combined having 42 institutions, Ghaziabad having 28 institutions, Faridabad 23 and Gurgaon 19 institutions.
IV. GOVERNMENT REFORMS RELATED TO ENGINEERING EDUCATION

The Government of India considered engineering education as an instrument to invest in to attain the national priorities of economic and social development, including improved standard of living and building technological leadership, as well as global priorities such as sustainable and equitable management of available resources. Today, engineering education is an enabler of economic growth as well as an indicator of a nation’s prosperity. Realizing this potential, Government of India has been formulating major policies related to engineering education to meet the varying needs within the country and to be an effective performer in the globalized knowledge economy.

4.1 Five Year Plans

a. First Five Year Plan (1951-56)

Table 4 shows the intake and output of diploma and degree in the year 1947, 1951 and 1955.

<table>
<thead>
<tr>
<th>Year</th>
<th>Course</th>
<th>Intake</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1947</td>
<td>Diploma</td>
<td>3,158</td>
<td>1,126</td>
</tr>
<tr>
<td>1951</td>
<td>Diploma</td>
<td>6,356</td>
<td>3,352</td>
</tr>
<tr>
<td>1955</td>
<td>Degree</td>
<td>2,500</td>
<td>900</td>
</tr>
<tr>
<td>1955</td>
<td>Degree</td>
<td>1,250</td>
<td>1,455</td>
</tr>
<tr>
<td>1955</td>
<td>Degree</td>
<td>1,352</td>
<td>1,225</td>
</tr>
</tbody>
</table>

(Source: First Five Year Plan, Ministry of Human Resource Development)

For technical education a provision of Rs. 11.10 crores was made. Out of this amount a sum of Rs. 7.55 crores was spent on schemes which are already in progress. They include schemes for the development of the Indian Institute of Technology, Kharagpur, and the Indian Institute of Science, Bangalore. Both these schemes are calculated to make up for the deficiency of facilities for post-graduate and research work in this country.

b. Second Five Year Plan (1956-61)

A provision of about Rs. 48 crores was allotted to technical education during the second five year plan. Part of this provision was for completing schemes initiated during the first plan, the rest being earmarked for the establishment of new institutions and courses. In the course of the second plan the Indian Institute of Technology, Kharagpur was fully developed for undergraduate and post-graduate studies.

c. Third Five Year Plan (1961-66)

In engineering and technology, provision was made in the Third Plan for expansion of facilities at the degree and diploma levels so as to increase the annual admission from 13,860 for degree courses and 25,570 for diploma courses to 19,140 and 37,390 respectively. In addition, there was provision for different types of part-time and correspondence courses and for the establishment of some specialised institutes. The Indian Institute of Technology at Kharagpur, which was started in the First Plan, was declared by an Act of Parliament as 'an institution of national importance' in 1957. Postgraduate Courses in industrial engineering and industrial management were started at the Indian Institute of Technology, Kharagpur, Victoria Jubilee Technical Institute, Bombay and the Indian Institute of Science, Bangalore. The programme for the introduction of a five year integrated degree course in engineering and technology will be completed in most of the universities. Other agendas included increased hostel facilities, strengthening Board of Technical Education in states, and development of art education.

d. Fourth Five Year Plan (1969-74)

Technical institutions have been planned for an annual admission capacity of 25,000 students at the degree level and 48,600 students at the diploma level. In view of the present unemployment among engineers, the actual admissions in 1968-69 were about 18,000 in degree and 27,000 in diploma courses. It was proposed to keep the enrolment targets under review in the light of the assessed demand of engineering personnel in the Fifth and subsequent Plans. The main emphasis in technical education, during the Fourth Plan, was on improving quality and standards. The improvement programmes related to pre-service and in-service training and training in industry of teachers the reorganisation of diploma courses in order to diversify them functionally to the needs of industry, expansion and improvement of postgraduate engineering studies and research, curriculum development and preparation of instructional materials including laboratory equipment. The number of places for practical training in industry which was increased from 2,000 in 1967-68 to 11,000 in 1968-69 was maintained at about the same level during the Fourth Plan. The stock of graduate engineers was estimated to have increased from 58,000 in 1960-61 to 134,000 in 1968-69, and of diploma holders from 75,000 in 1960-61 to 198,000 in 1968-69.

e. Fifth Five Year Plan (1974-79)

Regional Engineering Colleges and the Engineering Departments in the universities was further developed.
The Sixth Plan took into account the extensive infrastructure of facilities that was created for technical education at diploma, degree and postgraduate levels as well as for supporting services like teacher education and curriculum development. The emphasis during the Plan was on (a) consolidation and optimum utilisation of these facilities, (b) identification of critical areas and creation of necessary facilities for education in emerging technologies in the light of proper assessment of future technological manpower requirements, (c) improvement of quality of technical education at all levels and (d) furtherance of national efforts to develop and apply science and technology as an instrument of the country’s socio-economic progress.

The main emphasis in the field of technical education during the Seventh Plan period was on the following: Consolidation of infrastructure and facilities already created; Optimum utilisation of the existing facilities with attention to cost effectiveness; Identification of critical areas with a view to strengthening the facilities in the fields where weaknesses exist in the system at present; Creation of infrastructure in new areas of emerging technology vital for the development of the country and provision of necessary facilities for education, training and research in those fields; Improvement of quality and standards of technical education; Removal of obsolescence; Modernisation of engineering laboratories and workshops in the technical education institutions; Effective management of the overall system of technical education for an optimum return on investments made; Innovative measures to improve existing facilities to provide low-cost alternatives to achieve various goals and objectives laid down in the Plan; and Institutional linkages between technical education on the one hand, and rural development and other development sectors, on the other. To achieve these objectives there would be a balanced development of institutions of technical education at all levels. The Indian Institutes of Technology which have been set up as pace-setting institutions would be further developed as advanced centres of excellence.

The thrust areas in Technical Education during the Eighth Plan were: modernisation and upgradation of infrastructure; quality improvement; responding to new industrial policy and consequent interaction between institutions, industry and R and D organisations; resource mobilisation and institutional development. Despite efforts in the past, only a few technical institutions have managed to achieve high academic standards. Major qualitative reforms are necessary to upgrade the Regional Engineering Colleges (RECs). While the Indian Institutes of Technology (IITs) have enjoyed autonomy, flexibility and responsive governance, there is an urgent need to enhance their output and quality.

i. **Tenth Five Year Plan (2002-07)**

The Tenth Plan took initiatives for strategic planning and management of technical education. These included an electronic management information system (EMIS) scheme to be supported by the AICTE at the national level to plan the coordinated development of the technical education system and to be implemented in selected lead institutions. Two schemes were proposed to be launched to optimise resources and to make the system cost effective. One would involve networking of similar institutions in the areas of faculty and student exchange, joint academic and research programmes, faculty mentors, joint consultancy, continuing education and distance learning programmes, designing and updating curricula, preparation of instructional material, staff development and data and information sharing etc. The second would attempt to avoid duplication of efforts and wastage of scarce resources, establish common laboratory facilities in specialised areas which will also be shared by other institutions and used by industry on cost-sharing basis. During the Tenth Plan the University of Roorkee was upgraded to an IIT and the number of IITs increased to seven. Seventeen RECs, two Indian Institutes of Science Education and Research (IISERs) at Pune and Kolkata were also set up and three other institutions were upgraded to NIT level. A new Indian Institute of Information Technology, Manufacturing and Design was established at Jabalpur making it the third institute in the series. Several engineering colleges were conferred with Deemed to-be-University status. Many private universities became operational imparting technical education through legislation of various State Governments. Bengal Engineering College, a deemed university, was conferred with the status of unitary university and redesignated as Bengal University of Science and Technology. In several States, technical institutions were brought under the purview of new Technological Universities and this improved quality and standards.

j. **Eleventh Five Year Plan (2007-12)**

The recommendations was to increase the intake capacities of the Centrally funded technical institutions in the categories of IITs, NITs, IIITs, NITTRs, and IIIMs provide for an opportunity for major capacity expansion of high level technical and management institutions while providing for social equity. The State Engineering Colleges suffer from severe deficiencies in academic infrastructure, equipment,
faculty, library facilities, and other physical facilities. Top ranking students in entrance examination of the States opt for these institutions in view of relatively low fee structure and government recognition. These are supposed to be model institutions for the private sector institutions to benchmark their standards. If standards and norms are insisted upon for private institutions, the government cannot keep its institutions in unsatisfactory condition.

k. Twelfth Five Year Plan (2012-17)

During the Twelfth Plan, the second phase of TEQIP would be continued and phase-3 of TEQIP would be launched. Under phase-3, focus would be on the ‘ecosystem’ by supporting State Technical Universities introducing curriculum diversity and scaling up sector-wide programmes. This would ensure that the benefit of quality improvement interventions flow to all segments of technical education [5].

4.2 Major Committees, Policies and Recommendations related to Engineering Education

Post Independence the Government of India introduced numerous policies and set up several committees related to higher education and many were solely related to engineering and technical education. They are discussed in details below:

a. Sarkar Committee (1945)

The Committee recommended establishment of at least four technical institutions based on the Massachusetts Institute of Technology in the four regions of India to meet the post war industrial development [6].

b. Thacker Committee (1959-61)

The committee proposed to establish a Working Group on Technical and Vocational Training along with funding of 100 Phds. The committee mainly focused on post graduate and research [7].

c. Nayudama Committee (1986)

The committee applauded the IITs for producing B.Tech graduates of excellent quality and comparable to the best in the world. It also commended the IITs for their role in upgrading of engineering education in the country but questioned their impact on national, industrial, economic and social development. The IITs were prodded to make a conscious and concerted attempt to excel in research and to be in the forefront in at least a few areas with research groups of international standards. The IITs were also asked to improve their interaction with industry through a variety of mechanisms. On the scaling up of quality technical education, the Committee felt that institutions like the Regional Engineering Colleges (later renamed as NITs) must receive infusion of funds and should be upgraded but did not suggest new IITs. Interestingly, they also suggested a cap on an optimum campus size of 2500 students for each IIT [8].


It suggested measures like development and strengthening of Technical Manpower Information System [9].

e. Mashelkar Committee (1998)

The Committee focused on Regional Engineering Colleges (RECs), it recommended conversion of these RECs in National Institute of Technology (NITs) with a status of deemed to be University and certain structural changes in the governance [10].


The Committee focused on Revitalization of Engineering Education and balancing regional inequity, addressing faculty shortages and proper co-ordination of engineering education with All India Council for Technical Education (AICTE) [11].


The Committee recommended the provision to induct foreign nationals as faculty and joint appointments with industry. For enhancement of research the committee suggested incentivizing research performance, strengthening PhD programme, bright engineering students to be taken into the PhD programme, identifying grand challenge, research problems, etc. The Committee recommended enhancing the content of the syllabus for B. Tech course and encourage design or business allied projects. IITs must promote new and innovative thinking and promote brand IIT through Intellectual Property Rights (IPR). The Committee also recommended increasing the intake of B. Tech students and upgradation of existing institutions like NITs. The Rama Rao committee felt that there was no need for any change to the IITs Act for implementation of any of its recommendations [12].

m. National Knowledge Commission (Report to the Nation 2006-09)

The Committee recommended establishing an Independent Regulatory Authority for Higher Education (IRAHE) in engineering discipline defining the role of standing committee to exercise due diligence at the point it approves entry for an institution to grant degrees/diplomas. The committee also suggested that in order to maintain accountability and transparency it should be made compulsory for all engineering institutions to display information about their buildings, labs, faculty, intake of students, students performance, placements and recognition status on their respective websites. It was recommended to provide incentives (monetary and non-monetary) to the faculty and relax the criteria of holding Phd to Master’s degree in order to teach undergraduate students. The Committee recommended modifying the current curriculum to provide greater flexibility, inter-disciplinary perspective and choice of electives. In order to promote research in engineering discipline various initiatives like vibrant and well funded PhD programs with international exposure is recommended along with changes in resource allocation, reward systems and mindsets. It was recommended by the Committee to
engage academia and industry in joint research to encourage innovation and competitiveness in global economy. It was suggested to establish new quality institutions in under-provided states with public-private partnership. The Committee also recommended that elite institutions should adopt a few engineering institutions of their choice and mentor them in raising their standards, creating and making available educational resources in public domain for use of all students and conducting distance education courses, especially for students at post graduate level and working professionals [13].

n. Kakodkar Committee Report (Taking IITs to Excellence and Greater Relevance -2011)

The Committee was appointed by Ministry of Human Resource Development (MHRD) to recommend autonomy measures to facilitate IITs scaling greater heights. The committee was convinced that, given the demographic advantage that we have, the need to create conditions that can bridge the aspiration gap for our youth and the importance of knowledge and innovation in our inclusive economic growth; there was a pressing need to create and expand our education-research-technology-innovation entrepreneurship eco-system in the country. The Committee suggested that the tuition fees should be between Rs 2–2.5 lakh per year per student. This would be reasonable considering the high demand for IIT graduates and the salary that an IIT B.Tech is expected to get. As a part of IITs’ engagement in this process, each of the 5 Centrally funded science and engineering institutions (like IITs, IIITs, IISER, NISER) could select 5 bright young (aged around 35 years) faculty members from the IIT system and invite them to be a member of their Board of Governance and Senate. They could be tasked to build a relationship with the concerned IIT department and young faculty at the Institute to enable and enhance research collaboration (Rs 50 lakh to be identified for each faculty for this purpose) between the institute and the IITs. They would encourage B.Tech to join PhD programmes at the IITs and, if necessary, get faculty to do PhDs at the IITs. Similarly, they could get some IIT PhDs to join the institute as faculty [14].

4.3 Education Bills proposed to the Government

Ministry of Human Resource Development introduced the Universities for Research and Innovation Bill, 2012 in the parliament in May, 2012. The Bill provides for establishment and incorporation of Universities for Research and Innovation which would be at the front of making India a global knowledge hub. They would set benchmarks for excellence for other institutions of higher learning through path-breaking and promoting synergies between teaching, learning and research. The Parliamentary Standing Committee (PSC) on Human Resource Development had submitted its report on the Bill. The Government has therefore decided to constitute a Committee for recommending certain changes to the provisions of the Universities for Research and Innovation Bill, 2012 under the chairmanship of Prof. Ramakrishna Rangaswamy, Vice Chancellor, University of Hyderabad. The Foreign Educational Institutions (Regulation of Entry and Operations) Bill, 2010 seeks to allow foreign institutions to set up campuses in India without an Indian partner subject to specific conditions such as maintenance of a corpus fund.

The National Accreditation Regulatory Authority for Higher Educational Institutions Bill, 2010 seeks to set up a mechanism to accredit all higher educational institutions. This would ensure that students have access to information about the quality of an educational institution and each course offered by them. The Educational Tribunals Bill, 2010 seeks to set up national and state level tribunals. Disputes related to higher educational institutions and students or the faculty and institutions and statutory authorities shall be adjudicated by these tribunals. The Prohibition of Unfair Practices in Technical Educational Institutions, Medical Educational Institutions and Universities Bill, 2010 seeks to penalise unfair practices of private educational institutions. Unfair practices include charging of capitation fees, not giving receipts for payments made, and publishing false or misleading advertisement.

V. ISSUES RELATING TO PRIVATE ENGINEERING EDUCATION

Private Engineering Education has witnessed exponential growth in the last three decades but has faced and continues facing many problems as well viz.:

- Inadequate quality measures
- Ambiguity in admission policies and processes
- Shortage of good quality faculty
- Minimal usage of laboratory practices
- Poor Communication Skills of Students
- System of regulation and their efficacy to ensure norms and standards of engineering education
- Lack of accreditation of courses and programs and mobility of students with credit transfers
- No collaborations with foreign universities and laboratories
- Meagre entrepreneurship training and skills as part of curriculum
- Limited role and initiatives of industries and corporate.

VI. EFFICACIES OF GOVERNMENT POLICIES ON PRIVATE ENGINEERING EDUCATION

The above mentioned policies are effective and have met the shortcomings very efficiently in engineering education right from Sarkar Committee, as per its recommendations four IITs were established in four
zones of India viz. IIT (Kanpur), IIT (Kharagpur), IIT (Bombay), IIT (Madras) and IIT (Delhi) to Kakodkar Committee which through its recommendations promises to take IITs to excellence and greater relevance by measures of improvising the quality of these institutions. But the policies are limited to a few elite institutions of our country. The focus of government is not on the mushrooming growth of private engineering institutions post 1980s till date. There are no government policies that govern or control the system of private engineering colleges. It is agreed that they are privately managed but this does not mean that these institutions do not need government interference (not control). There are various issues that need to be addressed but with lack of policies and minimal government’s interference it is not possible. Elite engineering institutions are the face of India in global presence but for the betterment of society and economic growth of the nation it is imperative to not neglect the private engineering institutions that are huge in terms of presence and cater to the majority of the young demographic dividend.

VII. CONCLUSION

Quality of engineering education is not restricted to just teaching and students but is a multi-dimensional concept that should clinch all activities and conduct like administration, academic environment, academic programmes, teaching pedagogy, faculty, faculty-student ratio, research, scholarships, infrastructure, easy library (central ministries and premier institutes) accessibility, availability of good research papers from reputed sources and most important the academic environment.

Transparent internal as well as external evaluation conducted by independent academic specialists. While diverse sources of funding are necessary, public support for higher education and research remains essential to ensure balanced achievement of its educational and social missions.

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