Chapter – 1
Growth and Working of Professional Education in India

Today, more than ever before in human history, the wealth or poverty of nations depends on the quality of higher education. Those with a larger repertoire of skills and a greater capacity for learning can look forward to lifetimes of unprecedented economic fulfillment. But in the coming decades the poorly educated face little better than the dreary prospects of lives of quiet desperation.

Role of Higher Education in the Society

Higher education is generally understood to cover teaching, research and extension. If we critically analyze the different concepts of higher education, we can list the various roles higher education plays in the society. Higher education is the source or feeder system in all walks of life and therefore supplies the much-needed human resources in management, planning, design, teaching and research. Scientific and technological advancement and economic growth of a country are as dependent on the higher education system. Development of indigenous technology and capabilities in agriculture, food security and other industrial areas are possible because of our world-class higher education infrastructure. Higher education also provides opportunities for life long learning, allowing people to upgrade their knowledge and skills from time to time based on the societal needs. The Kothari Commission (1966) listed the following roles of the universities:\(^1\):

- To seek and cultivate new knowledge, to engage vigorously and fearlessly in the pursuit of truth, and to interpret old knowledge and beliefs in the light of new needs and discoveries:
- To provide the right kind of leadership in all walks of life, to identify gifted youth and help them develop their potential to the full by cultivating physical fitness, developing the powers of the mind and cultivating right interests, attitudes and moral and intellectual values,
- To provide the society with competent men and women trained in agriculture, arts, medicine, science and technology and various other profession, who will also be cultivated individuals, imbibed with a sense of social purpose;
To strive to promote quality and social justice, and to reduce social and cultural differences through diffusion of education; and

To foster in the teachers and students and through them in the society generally, the attitudes and values needed for developing the ‘good life’ in individuals and society.

The report of the UNESCO International Commission on Education in the 21st Century titled “Learning: The Treasure Within” (popularly known as Delors Commission) emphasized four pillars of education: learning to know, learning to do, learning to be. While, higher education intends to inculcate all these four in individuals and the society, the report highlighted the following specific functions of higher education:

- To prepare students for research and teaching;
- To provide highly specialized training courses adapted to the needs of economic and social life;
- To be open to all, so as to cater to the many aspects of lifelong education in the widest sense; and
- To promote international cooperation through internationalization of research, technology, networking, and free movement of persons and scientific ideas (UNESCO, 1996).

According to Ronald Barnett there are four predominant concepts of higher education:

(i) Development of Qualified human resources: Higher education as the production of qualified human resources. In this view, higher education is seen as a process in which the students are counted as “products” absorbed in the labour market. Thus, higher education becomes input to the growth and development of business and industry.

(ii) Training and Research: Higher education as training for a research career. In this view, higher education is preparation for qualified scientists and researches that would continuously develop the frontiers of knowledge. Quality within this viewpoint is more about research publications and transmission of academic rigor to do quality research.

(iii) Educational Administration: Higher education as the efficient management of teaching provision. Many strongly believe that teaching is
the core of educational Institutions. Thus, higher education institutions focus on efficient management of teaching-learning provisions by improving the quality of teaching, enabling a higher completion rate among the students.

(iv) Participation in the development process: Higher education as a matter of extending life chances. In this view, higher education is seen as an opportunity to participate in the development process of the individual through a flexible, continuing education mode.

**History of Higher Education in India**

Traditional Indian education boasts of the Vedas, the Puranas, the Ayurveda, the Arthasashtra, and many more and is a marvel of the Indian intellect. In the system of Gurukula (ancient Indian system of dispersing knowledge) the adolescent boys stayed in the house of the teacher (guru) to gain knowledge over a stipulated time-period. The Brahmacharya (celibacy) state was observed till a certain age while women and lower caste people had no access to education in the Middle Ages. The reform movement spread by the Sufi, Bhakti, Jain and Buddhist religions reduced the pain of the oppressed segments of the society and educational reforms gained eminence in the nineteenth century.

Few of the most important universities of India in the ancient times were Taxila, Vikramshila and Nalanda. Taxila University of 7th century BC was famous for medical studies and a galaxy of eminent teachers such as Panini, the well known grammarian, Kautilya, the minister of Chandragupta Maurya, and Charaka, a medical teacher of repute.

Nalanda was the highest learning center not just of India but also of the entire South Asia. Students from foreign countries like China, Japan, Korea used to come here for higher studies. It had around 10,000 students and teachers on its roll cards. The University had eight colleges. And one of the colleges had four-storied building. It was one of the earliest examples of residential cum learning complex.

Vikramshila University. Varanasi was famous for religious teachings. In the South, Kanchi was famous for its studies while the Vallabhi University was no less. Huan Tsang in his records mentions the university to be at par with Nalanda and Vikramshila universities. India had several great minds at work, which contributed in
every aspect of life. The concept of zero, decimal and Pythagoras Theorem were all
developed here. As India progressed from ancient to medieval its education system
deteriorated. Various factors were responsible for the degradation of this most efficient
and most ancient education system of the world.\textsuperscript{5}

\textbf{Present Education System:} The present educational system of India is an
implantation of British rulers. Wood's Dispatch of 1854 laid the foundation of present
system of education in India. Before the advent of British in India, education system
was private one. With the introduction of Wood's Dispatch known as Magna Carta of
Indian education, the whole scenario changed. The main purpose of it was to prepare
Indian Clerks for running local administration. Under it the means of school educations
were the vernacular languages while the higher education was granted in English only.
British government started giving funds to indigenous schools in need of help and thus
slowly some of the schools became government-aided.

Contemplating on the new system which was introduced Mahatma Gandhi
expressed his anguish in following words, "I say without fear of my figures being
challenged successfully, that today India is more illiterate than it was fifty or a hundred
years ago, and so is Burma, because the British administrators, when they came to
India, instead of taking hold of things as they were, began to root them out. They
scratched the soil and began to look at the root, and left the root like that, and the
beautiful tree perished. The village schools were not good enough for the British
administrator, so he came out with his program. Every school must have so much
paraphernalia, building, and so forth. Well, there were no such schools at all. There are
statistics left by a British administrator which show that, in places where they have
carried out a survey, ancient schools have gone by the board, because there was no
recognition for these schools, and the schools established after the European pattern
were too expensive for the people, and therefore they could not possibly overtake the
thing. I defy anybody to fulfill a program of compulsory primary education of these
masses inside of a century. This very poor country of mine is ill able to sustain such an
expensive method of education. Our state would revive the old village schoolmaster
and dot every village with a school both for boys and girls."\textsuperscript{6}


Table – 1.1

Higher Education System-A Statistical Overview

<table>
<thead>
<tr>
<th>No. of Institutions/Enrolment</th>
<th>2010-11</th>
<th>2011-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universities</td>
<td>493</td>
<td>523</td>
</tr>
<tr>
<td>Colleges</td>
<td>31812</td>
<td>33023</td>
</tr>
<tr>
<td>AICTE approved technical Universities</td>
<td>10653</td>
<td>11809</td>
</tr>
<tr>
<td>Distance teaching universities</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Enrolment in universities and colleges (in Lakh)</td>
<td>156.35</td>
<td>169.75</td>
</tr>
<tr>
<td>Enrolment in Distance learning (in Lakh)</td>
<td>36.37</td>
<td>37.45</td>
</tr>
<tr>
<td>AICTE Approved Technical Programmes</td>
<td>9565</td>
<td>10364</td>
</tr>
<tr>
<td>Intake in AICTE approved Technical Programme (in Lakh)</td>
<td>24.85</td>
<td>26.15</td>
</tr>
</tbody>
</table>

Source: UGC/AICTE Reports, 2012

National Policy of Education (1992) laid down many objectives for the development of education system in India but it has not been successful in achieving all of them. It has specified that the examination system should discourage the memorizing but it is what is going on. The education in India seems to encourage rote learning instead of experimentation and questioning. There is some disparity in assessment as all the State Boards have different standards of evaluation. The reservation on the basis of caste and religion is also a negative point in Indian education. Corruption is visible in the allocation of seats of institutions of higher studies and student politics is another sore point. These are some of the issues, which need to be worked upon. Though there are disparities between the objectives and their implementation in education but still education system in India has come a long way and will continue to improve in the future.7

Professional Courses in India

The professional courses have been playing a crucial role in the Indian professional scenario for the past several years. The professional courses in India are of great importance to the students, as these help them to gear up for better opportunities in professional lives. There are, in fact, numerous professional courses both at the undergraduate and postgraduate levels. There are essential eligibility criteria through which the students need to pass before they can enroll themselves to the professional courses.
The professional courses in India can be of different durations like short-term and long-term courses and they can also be of different kinds like the part-time or full time courses. The courses can be classified as degree, certificate or diploma courses and they are offered in almost all educational disciplines in India. The professional courses in India are offered by both the regular and open universities; however, the open universities offer most of the professional courses in India.

The several disciplines in which professional courses in India are offered include Computer Science, Business Management, MBA, Medical & Pharmacy, Accounts & Finance, Teaching, Academic Courses, Media & Entertainment, Law Courses, Event Management Courses, Engineering, Technical, Language Courses, Hotel Management, Air Crew, Air Hostess Academy, Fashion Designing Courses, PhD and Research, Travel & Tourism Management etc. Apart from that there are also a large number of professional courses in India, offered in the subjects like Mass Communication, Public Relation, Advertising, Human Resource, Community Development, Architecture etc. amongst these there are certain professional courses in India, such as, engineering courses, medical courses, management, multimedia and others, which are quite popular with the students.

**Professional Education in Pre-Independence Era** : The impulse for creation of centres of technical training came from the British rulers of India and it arose out of the necessity for the training of overseers for construction and maintenance of public buildings, roads, canals and ports and for the training of artisans and craftsmen for the use of instruments and apparatus needed for the army, the navy and the survey department. The superintending engineers were mostly recruited from Britain from the Cooper's Hill College and this applied as well to foremen and artificers; but this could not be done in the case of lower grades- craftsmen, artisans and sub-overseers who were recruited locally. As they were mostly illiterate, efficiency was low. The necessity to make them more efficient by giving them elementary lessons in reading, writing, arithmetic, geometry and mechanics, led to the establishment of industrial schools attached to Ordnance Factories and other engineering establishments.

While it is stated that such schools existed in Calcutta and Bombay as early as 1825, the first authentic account we have is that of an industrial school established at Guindy, Madras, in 1842, attached to the Gun Carriage Factory there. A school for the
training of overseers was known to exist in Poona in 1854. Meanwhile in Europe and America, Colleges of Engineering were growing up, which drew to their men having good education and special proficiency in mathematical subjects. This led to discussions in Government circles in India and similar institutions were sought to be established in the Presidency Towns.

The first engineering college was established in the Uttar Pradesh in 1847 for the training of Civil Engineers at Roorkee, which made use of the large workshops and public buildings there that were erected for the Upper Ganges Canal. The Roorkee College (or to give it its official name, the Thomason Engineering College) was never affiliated to any university but gave diplomas considered to be equivalent to degrees. In pursuance of the Government policy, three Engineering Colleges were opened by about 1856 in the three Presidencies. In Bengal, a College called the Calcutta College of Civil Engineering was opened at the Writers' Buildings in November 1856; the name was changed to Bengal Engineering College in 1857, and it was affiliated to the Calcutta University. It gave a licentiate course in Civil Engineering. In 1865 it was amalgamated with the Presidency College. Later, in 1880, it was detached from the Presidency College and shifted to its present quarters at Sibpur, occupying the premises and buildings belonging to the Bishop's College.

Proposals for having an Engineering College at Bombay city having failed for some reasons, the overseers' school at Poona eventually became the Poona College of Engineering and affiliated to the Bombay University in 1858. For a long time, this was the only College of Engineering in the Western Presidency. In the Madras Presidency, the industrial school attached to the Gun Carriage Factory became ultimately the Guindy College of Engineering and affiliated to the Madras University (1858).

The educational work in the three Colleges of Sibpur, Poona and Guindy has been more or less similar. They all had licentiate courses in civil engineering up to 1880, when they organized degree classes in this branch alone. After 1880, the demand for mechanical and electrical engineering was felt, but the three Engineering Colleges started only apprenticeship classes in these subjects. The Victoria Jubilee Technical Institute, which was started at Bombay in 1887, had as its objective the training of licentiates in Electrical, Mechanical and Textile Engineering. In 1915, the Indian
Institute of Science, Bangalore, opened Electrical Engineering classes under Dr. Alfred Hay and began to give certificates and associate ships, the latter being regarded equivalent to a degree.8

In Bengal, the leaders of the Swadeshi Movement organised in 1907 a National Council of Education which tried to organise a truly National University. Out of the many institutions it started, only the College of Engineering and Technology at Jadavpur had survived. It started granting diplomas in mechanical and engineering course in 1908 and in chemical engineering in 1921. The Calcutta University Commission debated the pros and cons of the introduction of degree courses in mechanical and electrical engineering. One of the reasons cited from the recommendations of the Indian Industrial Commission (1915), under the Chairmanship of Sir Thomas (Holland) against the introduction of electrical engineering courses, is given in the following quotation from their report: "We have not specifically referred to the training of electrical engineers, because electrical manufactures have not yet been started in India, and there is only scope for the employment of men to do simple repair work, to take charge of the running of electrical machinery, and to manage and control hydroelectric and steam-operated stations. The men required for these three classes of work will be provided by the foregoing proposals for the training of the various grades required in mechanical engineering. They will have to acquire in addition, special experience in electrical matters, but, till this branch of engineering is developed on the constructional site, and the manufacture of electrical machinery taken in hand, the managers of electrical undertakings must train their own men, making such use as they can of the special facilities offered for instruction at the engineering colleges and the Indian Institute of Science."9

The credit of first starting degree classes in mechanical engineering, electrical engineering and metallurgy goes to the University of Banaras, thanks to the foresight of its great founder, Pt. Madan Mohan Malaviya (1917). About fifteen years later, in 1931-32, the Bengal Engineering College at Sibpur started mechanical and electrical engineering courses in 1935-36 and courses in metallurgy in 1939-40. Courses in these subjects were also introduced at Guindy and Poona about the same time. Quite a number of engineering colleges have been started since August 15, 1947. It is due to the
realization that India has to become a great industrial country and would require a far larger number of engineers than could be supplied by the older institutions.\textsuperscript{10}

**Globalization and Higher Education**

Beginning in 1991, the Government of India introduced a number of economics measures to improve the working of the economy. The objective was clear to move the economy into a market friendly economy. Economic measures such as liberalizing trade and investment policy, deregulating stringent legal framework, privatizing weaken state owned enterprises, which spread over a number of years, made the country a global economy. A global economy brings changes in all the sections of economy, particularly in economic growth, inflow and outflow of trade and investment.

1. According to the results of a special survey 'Higher Education: Free degrees to fly' higher education is already a global business.\textsuperscript{11} The days when higher education was a matter of national policy and government regulation are rapidly fading. Higher Education provisioning is now globalised and in many ways, a commercialized affair and the way that the State had in the goings on is vastly diminished. According to Andreas Schleicher of OECD, a Paris based ‘Think Tank’ the numbers studying abroad were statistically negligible two decades ago.\textsuperscript{12} According to the International Finance Corporation (IFC), the growth is now soaring: 2 million university students-approaching 2\% of the world's total of around 100 million studying outside their home country in 2003. Since the late 1990s the higher education market is growing by 7 per cent a year. The Economist Survey on higher education further indicates that annual fee income alone is estimated at $ 30 billion. While private profit seeking companies have entered the education business, even government-controlled universities are seeking independence from governmental authority. However, many countries including India, continue to control the fee structure of their universities causing financial stress to foreign students, who are generally made to pay much higher fees than local students. This has resulted in many universities openly soliciting entry of foreign students. To facilitate this process they have even tailored their courses to international requirements besides appointing agents abroad and publicizing the offers widely in the media.\textsuperscript{13}
2. A University is no longer a place where students apply to study. Universities are now actively pursuing students, especially foreign ones using a wide variety of strategies to market their courses. The student is now the customer or client. With globalization, Universities are spreading their reach beyond geographical and political borders. The British, Australian and American Universities are setting up campuses in Singapore, China and the Gulf. Universities realise that they can examine many more students than they can teach. Hence many of them are collaborating with other institutions or franchisees to teach their courses under their brand name without getting involved in the direct business of imparting the education.

3. The example of Professional Training Colleges best illustrates this point. The growth of such colleges world wide shows rising desire for professional qualifications, a new need for mid career education and finally, the increasing acceptance of professionally qualified candidature in the job market. In this connection, the example of the US CFA (Chartered Financial Analyst) is prominent. This professional degree awarded by the American Association of Financial Professionals has now become so popular that most students prepare for the qualifying examination with the help of private tuition companies. Very often the costs incurred in preparing for the examination outstrip the stipulated entrance fee of $ 1455 for the examination itself. Now about 40 universities in the US are teaching the course as a part of their post graduation curriculum.

Advantages of India: The globalization process helped India in strengthening its professional education.

1. Now in the era of reverse brain drain, the IIT graduates increasingly prefer to return or remain in the country. It is stated by some that Bangalore today has 150,000 software engineers compared to 130,000 in Silicon Valley. According to Computerwise, the top 50 global IT service firms alone target raising India’s headcount from 173,000 in September 2004 to 500,000 by end of 2011.

2. According to NASSCOM, India had a total of 650,000 IT professionals in 2002 and by February 2011, they were to rise to 813,500. According to Brainbench Inc., (145,517 against 194,211) The Indian figure was 30 times larger than Europe’s top country Germany (4802) and one hundred times Chinas (1325). India, therefore, does have an overwhelming lead in software. Further, leading US IT firms has their CMM Level 5 certification in India,
rather than in the US. The High Technology leadership of the US is now coming under threat from India. In a paper published by Richard Freeman of Harvard University quoted by Sheshabalaya, the employment at General Electric Company’s Global Research Headquarters in New York is being surpassed by their own facility, the Welch Centre at Bangalore. (see Ashutosh Sheshabalaya, 'Rising Elephant-the Growing Clash with India over white-collar jobs and its Challenge to America and the World', Macmillan India, 2005) Similarly, IBM cut its jobs in the US and Europe. But recruited more in India. In another surprise move, in just 2 years, the Indian R&D Centers of Bell Laboratories, the world’s largest research organization, filed more patents than the US Labs. In August 2006, India announced 1312 applications for drug patents, a record second only to the US. It is 25 per cent higher than Germany which is the third in ranking, and ahead of Britain, Japan, etc.  

3. India is therefore, not just at the lower end of the software and research business, but is now in a leading position of the scientific and financial research revolution. This is also confirmed by the massive market value of IT firms on US stock markets which indicate that the investment community endorses this view. According to current thinking an estimated $356 billion worth of global financial services will relocate to India in the next 5 years, producing a cost saving of $130.  

4. From R&D and scientific research, Indian commercial research market has further widened to financial and economic research. It has been said that Wall Street is also outsourcing white-collar jobs to India as a reaction to the local scandals, which erupted in 2002 and 2003. Already McKinsey & Co. and AT Kearney Inc. have shifted bulk of their research to India. J.P.Morgan, Moran Stanley, Deutsche Bank, etc. are all considering the same. Billion for top 100 financial service firms.  

5. In the health sector, the story is the same. According to McKinsey & Co’s forecast, India will earn $2 billion a year by 2012 from ‘healthcare tourism’. Peter Dracher has noted that the Indian medical schools in New Delhi are the best in the world. Indian hospitals already treat over 150,000 foreign patients a year and India is emerging as one of the most sought after medical destinations in Asia for offshore patients. The 30 hospitals under the Apollo Group are believed to have over the period treated 60,000 foreigners. Escorts Heart
Institute and Research Centre have a large number of foreigners coming in every year looking for high quality cardiac care. The cost of treatment and surgery is 25 per cent that of the UK.\textsuperscript{16}

6. In more fundamental research, Mosanto has set up a massive R&D facility within the Indian Institute of Science, Bangalore. Indian biotech firm, Shanta Biotechnics stunned the scientific community with r-DNA based hepatitis vaccine (see India Infoline, September 9, 2000). Work on genetically modified food is going on full swing in India. Institute of Genomics and Integrative Biology (IGIB), based in New Delhi, have discovered these new genes of SARS virus.

7. The biggest company in the world – GE has announced that their R&D centre at Bangalore will take up 30 projects underway in the US. This is their biggest facility outside the US where 1800 engineers with a quarter of them holding Ph. D degrees are engaged in fundamental research. Oracle, the famous software company has 7000 employees in India, mostly engineers.\textsuperscript{17}

8. India is, therefore, fast moving up the value chain in all aspects of scientific and financial research from software to medical to biomedics. There are already more software experts in Bangalore than in the Silicon Valley. As Business Week has concluded, ‘unlike China, India’s significant cheap labour is not a pool of factory workers, but a huge crop of scientists’. In the same view, Singapore Prime Minister has reportedly stated that while China has become the world’s factory floor, India has become its IT and back office! However, China is very keen to seek a piece of the IT pie. At 2009 China IT Service Summit, an international event organized by International Executive Association in New York, attended by 100 persons representing leading companies, it was clear that China lags behind India in the global market for IT. According to analysts the world’s outsourcing business is currently about US$ 20 billion and India holds about 90% of it while China earns only $ 600 million. But this should not lead to complacency.\textsuperscript{18}

\textbf{Public Spending on Higher Education:}

India has developed one of the largest systems of Higher Education in the world with over 230 public universities and 6500 vocational colleges catering to about 10 million students. Most of these are publicly funded although some may be privately run. The financing of higher education, however, is often reprioritized due to competing
demands for budgetary funds from primary and secondary education sectors. As a proportion of GNP Higher Education was only about 0.19 per cent in 1950-51. By 1980-81 it went up five fold to 1 per cent but by mid-1990s it dropped to 0.4 per cent. In the government plan outlay the share of higher education doubled for 9 per cent in the first five year plan to 18 per cent in the second. It increased to 25 per cent in the fourth but has now come down to 15 per cent in the seventh five year plan. In the eight five year plan it was around 8 per cent. It may be stated that the non-plan expenditure in education is huge compared to plan expenditure.19

**Growth and working of Professional Education in India**

In India there are many types of professional education. They include medical, engineering, pharmacy, teacher education, management education and legal education. In this study, we have not discussed in medical education as its problems are totally different from other types of professional education. Now an attempt is made in the following pages to discuss the growth and problems of professional education in India except medical education.

In a society full of diversity, ideologies and opinions, professional education means different things to different people. The pluralism of views is quite inevitable and some would opine it should be like that only. In terms of the level, higher education includes college and university teaching-learning towards which student’s progress to attain professional educational qualification. Higher education imparts in-depth knowledge and understanding so as to advance the students to new frontiers of knowledge in different walks of life (subject domains). It is about knowing more and more about/less and less. It develops the student’s ability to question and seek truth and makes him/her Competent to critique on contemporary issues. It broadness the intellectual powers of the world around.

1. **Engineering Education in India**

   Technical education in India contributes a major to the overall education system and plays a vital role in the social and economic development of our nation. In India, Technical education is imparted at various levels such as craftsmanship, diploma, degree, post-graduation and research in specialized fields catering to aspects of technological development and economic progress.

   The industrial revolution of the 18th century laid the foundation of technological civilization. And gave rise to a new system of learning process which is known as
‘Technical Education’. The technical education system brought out the concept of establishment of training institutions in order to meet the challenges of fast changing technological environment.

A historical account of the development of engineering education in India in different ages will help us to appreciate and understand the various aspects of educational developments as also the present problems. The historical account can broadly be dividend in to pre independence era and post independence era.

The foundation for Technical education is laid in India almost at the same time as in Europe but its growth was stunted till India became independent. In 1794 the English traders established a survey school in Madras to train Indian personal in modern land survey and to assist the British surveyors. In 1842, an industrial school was established at Guindy, Chennai, which was attached to the gun carriage factory Chennai. Another school was established in Pune in 1854 for training overseas students.

The first engineering college is Thomson Civil Engineering College; Roorke was established in 1847 by the provincial Government to supply manpower needed for Public works and Survey departments of the government of India. The Bengal Engineering College was the second Engineering College started during the year 1856. In the year 1887, the third one, Veera Martha Jijiya Bai Technological Institute was established in Maharastra. In 1908 the fourth engineering college in Jadhavapur in West Bengal was established with a diploma course in Mechanical engineering. Which was followed, by a chemical engineering course in 1921.

In the year, 1909, Sir Jamshedji Tata, an industrialist, established Indian Institute of Science (Iisc) in Bangalore with a certificate and associateship course at the degree level in Electrical Engineering, and for extending Engineering Education to higher studies and research work. The establishment of IISc is a milestone in Engineering Education. In 1917, Banaras Hindu University Banaras started a comprehensive degree course in electrical and Mechanical engineering. In 1936-37 a two member team of British experts advised the government on major reform in the technical education system, based on which, the model institution called Polytechnic, was started in Delhi, which was later renamed as Delhi College of Engineering.
In 1944, the Government of India stated a department of planning and development. Thus it is in 1944 that the foundation of a planned development of Technical education training and research was laid. The result was the establishment of Department of Scientific and Industrial Research (DSIR) and All India Council for Technical Education (AICTE) in the year 1945. During 1909 to 1947, around 30 engineering colleges were established in different States to provide engineering education in the areas of Civil, Mechanical and Electrical engineering. Karnataka was the first state to allow private engineering colleges way back in 1946.

**Post Independence era:** The birth of AICTE gave a new dimension to engineering education in India and it started with the appointment of a committee in 1945 under the chairmanship of Sri N.R. Sarkar committee, which recommended the establishment of four higher level technical institutes in the pattern of MIT, USA to meet India’s post war need for high grade engineers and technologists. Accordingly, the Government of India has established the Indian Institute of Technology and National Institute technology at various places.

The total number of engineering colleges by the April 2011 reached to 1825 with a total intake of 5, 20,891 students as per AICTE. Several engineering colleges were conferred deemed university status. Many private universities have become operational, imparting technical education through legislation(S) of various governments. In several states, technical institutions were brought under the purview of the new technological universities. Besides, some universities are also offering the degree in engineering course through distance education mode.

**Growth of engineering education in Andhra Pradesh:**

The first engineering college in AP is Osmania University (O.U.) College of engineering established in the year 1929 and the Second College is O.U. College of Technology established in the year 1943 by Osmania University. Jawaharlal Nehru Technological University (JNTU) established two more engineering colleges in 1946 in Ananthapur and in Kakinada. The fifth one is Kakatiya University (KU) College was established by Andhra University in Visakhapatnam in the year 1956. S V College of Engineering is the seventh one established by Sri Venkateswara University in Tirupati in the year 1958. The eighth engineering college was established by JNTU in Hyderabad in the year 1958.
in Hyderabad in the year 1965. The ninth college in AP was the first private engineering college by name: V.R. Sidharhda College of Engineering (VRSE) in Vijayawada established in the year 1977. Three more private engineering colleges, Chaitanya Bharathi Institute of Technology, Hyderabad, Vasavi Engineering College, Hyderabad and N B K R Institute of Science and Technology at Vidyanagar, near Nellore were established in the year 1979.

The growth of private engineering colleges picked up in this year itself six colleges were established. From then onwards two colleges each in the year 1981 & 1984 and one college each in the year 1985, 1986 and 1989 were established. Then after a gap of six years four more colleges were established in the year 1995 and three colleges in the year 1996. The growth of engineering colleges from 1997 to 2006 is substantial because of the boom in the software sector. The total number of engineering colleges in AP reached 281 with a total intake of 91,716 by April 2007\(^{19}\). In this context the role of state government, AICTE and universities in the establishment of private engineering colleges are discussed.

Role of State Government, AICTE and Universities in the establishment of private Engineering Colleges in Andhra Pradesh.

**Role of State Government:**
1. Issuance of NOC to the Trust Registered Society, which is desires of running self-Financed Engineering Colleges.
2. Preparation of rules and regulations for admission to Engineering Colleges as per the norms of the AICTE.
3. Conducting of Entrance Exam.
4. Finalizing admissions to the extent of 80% (by EAMCET) and 20% by Management.
5. Decision about tuition fees.
6. General supervisory control to make sure that the Management does not violate the democratic principles and social Values.

**Role of AICTE:** AICTE plays a very important role in monitoring and developing Technical Education in our county. Its main aim is to see that our Engineering Graduates passing out from any University in India must be at par with their counterparts passing out from other Universities of the world. This will ensure their global acceptance.
1. All new proposals for starting self financed Engineering College are scrupulously scrutinized by AICTE with reference to the availability of land, financial position of the society, basic infrastructure development etc.

2. It has standardized the norms with reference to plot size, buildings, equipment, library, faculty etc.

3. All efforts of AICTE are geared towards making the college properly trained technical manpower.


**Role of University:** University plays a key role in affiliation of the colleges after checking the infrastructure and human sources. It plans and monitors the academic schedule. It also plays the following roles:

1. Granting of affiliation to the newly started engineering colleges after issuance of NOC by the Government.
2. Design of curriculum for the Degree courses.
3. Conducting examinations.
4. Framing of rules for promotion of students to next higher class.
5. Issuance of Degree Certificates to those who satisfy all conditions of passing the necessary examinations.
6. Periodic inspections.

**Present Status of Engineering Education in India:**

It is true that higher engineering education in India has advanced a large scale in the last 20 years has changed from elite education to popular education. However, there still exist many problems, especially in the face of the great opportunities and challenges, it has cope with the integration of global economy and internationalization of education. The opportunities, Impact of globalization on India’s engineering education with a use study of VIT Vellore and problems faced by technical education in India are highlighted. The following are the opportunities of engineering education in India.

(1) India is becoming potential engineers’ cradle of the world in the following manner. The rapid development of domestic and international industries has brought about great need for advanced talent, which can be engaged in global economy. This has created good developing opportunities and great challenges for India’s higher engineering education. On the other hand, international industries also need a large number a large number of engineers, but the sources
of engineering graduates from developed countries are far from enough. For example, in the world-famous Silicon Valley in America, engineers from India and other foreign countries almost account for 60% of all engineers working there. Some of them have done their graduation even under graduation from American Institutions rather than having passed out solely from India’s Institutes.

(2) Large number of good engineering student resources is available in India as compared to developed countries. The developed countries are short of engineering students. In India, 33% college students are in engineering, while the proportion is 20% in Germany and 5% in USA. Thus, the large source of excellent engineering graduates has laid a solid foundation to the enhancement of engineering education in India.

(3) Engineering education in India has continuously improved in both scale and quality. Colleges of engineering have achieved outstanding results in terms of teaching, academic research, teacher quality, teaching facility and campus construction. Each year, over half a million students is enrolled in colleges of engineering. Compared with other countries, the number is rather huge. For example, in the year 2004, American Institutes passed out 75,000 engineering graduates while Indian Institutes passed out 4,50,000. Along with the further development of the integration of global economy, world industries constantly shift from developed countries to developing countries. The great needs demanded by world industries will offer large number of opportunities for India’s higher engineering education. The large scale of engineering education and excellent student resource will make it possible for India to become a cradle of engineers in the world.

Our country is facing internationalization and market orientation in the engineering education. To meet this challenge, there is a need for changing the engineering education systems also. Several fundamental changes that have taken place in the recent past are globalization, the concept of sustainability, rapid advances in science and technology especially in the fields of information Technology, Bio Technology, Bio Technology, and Materials Technology, new process for the development, utilization and expansion of knowledge. They have raised questions of whether and to what extent the qualification, education and training, need to be tuned to master theses new challenges and requirements. Challenges for the engineering
education and the engineering professions have also arisen from technological and organizational change and the internationalization of business.

The internationalization of business requires engineers of global standards. Engineering as a profession demands traditional attributes such as problem solving abilities, analytical skills, communication skills, interpersonal skills, decision-making skills etc. The new millennium imposes additional demands such as learning ability, yen for life long learning, ability to work in a team, creativity, innovation, integration skills, ability to master knowledge from neighboring disciplines, communication to sustainable development etc.

**Impact of Globalization on India/s Engineering Education.**

The liberalization, privatization and globalization process was started in India after the year 1991. Due to this economic growth rate was reached up to 8.5%. To cope up with this economic and industrial growth, the need for high-level technical manpower was raised. Due to globalization many of the multinational companies in Information technology, manufacturing and fast moving consumer goods (FMCG) organizations are started their manufacturing/marketing offices in India. The USA based and IT and other companies have started out sourcing their requirements from India. This has resulted in demand for technical trained manpower. By recognizing this central and state governments have started giving permission to the Engineering Colleges in India. The growth of engineering colleges has been rapid from the year 1995.

Globalization has benefited the graduates of good quality institutions like IITs and NITs by securing good jobs in multinational companies with more salaries. The students are able to secure admission and assistantship from graduate schools aboard particularly in the US. The acceptability of Indian students is principally due to those features of the education system promoting globalization, such as language instruction, curricular content, very similar and compatible education systems and structures etc.

Training programs with foreign universities are offered by the handful of private sector institutions in collaboration with foreign universities, particularly with US university has benefits some of the Indian Institutions. There are several bilateral inter governmental programming which permits the two-way flow of students and scholars between and other counties i.e., both in developed and developing countries. A recent Indo-German initiative supported by DAAD the Germany Academy Exchange Service,
envisages deputation up to 300 M.Tech students from the 6 IITs to German Universities for their project work and the reverse flow up to 50 Ph.Ds. Scholars from Germany Universities in their IITs for their research work.\textsuperscript{20}

Due to globalization, apart from reputed institutions the bright students from other institutions also got jobs. The placements to the students are very good till 2007. The National Board of Accreditation (NBA) is an autonomous body assures and certifies quality in technical education. Due to this, the globalization process is also benefiting the other institutions, which are accredited by NBA. One of the private institutions, which have got benefited by the globalization process in India, is Vellore Institute of Technology (VIT) University.

\textbf{2. Pharmacy Education in India}

Pharmacy is related to health sciences. It is the profession responsible for the preparation, dispensing and appropriate use of medication and which provides services to achieve optimal therapeutic outcomes. A pharmacists job is to prepare, mix, compound or dispense drugs and medicines, ointments, power, pills, tablets and injections on the prescription of a medical practitioner, dentist or veterinarian. In detail, they are concerned with production of pharmaceutical products, development of the methods or process of production and quality control. Those in research concern themselves with synthesis of new drugs (what is commonly referred to as molecules), new processes, clinical testing of the effects of such drugs on animals and human, and obtaining the required license from the drug control authorities. A pharmacist is required to explain the mode and precautions regarding the use of medicines dispensed in a hospital pharmacy prepare special formulations normally not available in the market, assist the physician in rendering necessary information about various drugs, their contra-indications, incompatibility etc.

The beginning of pharmaceutical education in India was initiated at the Banaras Hindu University (BHU) in 1932 by Professor M.L. Schroff. From there it has been a long journey of almost 80 years for this profession in this country. The enactment of the Pharmacy Act, 1948 established the statutory regulation of pharmacy institutions in India. The Pharmacy Council of India (PCI) was established in 1949 under “Minority of Health” and the first education regulation (ER) framed in 1953, which were subsequently amended in 1972, 1981 and 1991. On the other hand, the pharmacy
education has never been part of paramedical team and hence, its development has been quite unique and quite different from rest of the World Pharmacy Council of India and Pharmacy Act was created to establish minimum qualification required to be a pharmacist. The role of pharmacist in the society was never been given its due place and did not grow due to less paying job compared to job in Industry. This would have been the reason for transfer of pharmacy education from PCI to All India Council of Technical Education (AICTE) under the “Ministry of Human Resource Development”.

It can be said that evolution of pharmacy education has been quite confusing and developed like a vagabond. Hence, evolution of pharmacy education has been primarily due to evolution of pharmaceutical industries and has lot of impact under curriculum of “Bachelor and Master Pharmacy” programmes. Similarly, medical education in India grew with less focus on research and development and hence, India produced medical graduates more with clinical sense acquired through experience and less of doctors with analytical bent of mind. Due to tight junction at the entry point, integration of the thoughts of medical sciences, pharmaceutical sciences, nursing, engineering sciences and basic sciences have never taken place. Primarily, this resulted in isolated development of medical education without integration with other sciences including pharmaceutical. It is also true in case of pharmacy education. It may also one of the reasons of pharmacy education not to be a part of healthcare system.

**Globalization Impact:** Today, the global institutes are moving towards excellence in research and capability building in order to better meet the requirements of 21st Century. This forces us to evaluate status of pharmacy education in India. There is a rapid transition in pharmacy profession worldwide and in the era of globalization, we cannot be silent spectators. If we have to compete with the rest of the world and become guiding torch for rest of the world, we will have to become proactive. It means, we have to define the goals pharmacy education for present and future and re-frame our curriculum according to define goals to meet the global challenges. In the past decade, the technical education in India has spread its roots at an amazing rate. On the other hand, there is sharp decrease in interest and overall admission to undergraduate programme (B.Pharmacy) in pharmacy during the last three academic years. This decline may be attributed due to changed trends in pharmaceutical industry which has become primarily research and marketing oriented from production oriented. Role of
knowledge in giving in increasing employability of the students has become need of the hour. Simultaneously, other facets of pharmacy profession should be given adequate attention in curriculum development and in creation of knowledge based manpower for service of the society. The products of this form of education lack the much needed professionalism and rational thinking required for problem solving. So, the situation demands a nudge for the system to ensure its revival in order to better meet the needs of 21st century.

**Pharmacy Profession in India:** To meet the varying needs of the profession at different levels the following pharmacy programs are offered in India today: Diploma in Pharmacy (D.Pharm), Bachelor of Pharmacy (B.Pharm), Master of Pharmacy (M.Pharm), and practice based doctor of pharmacy (Pharma D) and Doctor of Philosophy in Pharmacy (Ph.D.). To practice as a pharmacist in India, one needs at least a diploma in pharmacy, which is awarded after 2 years and 3 months of pharmacy studies & practical training. These diploma – trained pharmacists are currently the mainstay of pharmacy practice in India. Every year nearly 20000 D. Pharm, 30,000 B.Pharm, 6000 M.Pharm and 700 Pharm.D. students graduate in the country. Pharmacy Council of India (PCI) is the statutory body established in 1949, for regulating pharmacy education and practice of pharmacy profession in India. PCI is actively working towards strengthening and upgrading the curriculum to produce competent workforce that is able to meet the growing demands of the industry & community. In 2003, the Pharma Vision 2020 Charter Congress at Chennai. The Vision 2020 is focused on promoting the highest professional ethical standards of pharmacy, focusing the image of pharmacists and competent healthcare professionals, sensitizing the community, government and others on vital professional issues and supporting pharmaceutical education and sciences in all aspects. Indian Pharmaceutical Association once again, with the support of the leaders of the pharmacy profession presented the road map to Pharma Vision 2020 at the 58th Indian Pharmaceutical Congress held in December, 2006 at Mumbai. The themes of the subsequent Congress in the country have been centered on Pharma Vision, 2020.

**Total Quality Management in Pharmacy Education:** Applying principles of TQM to pharmacy education in India leads to the development of pharmacy education in India. The concept of Total Quality Management (TQM) although developed by an American was successfully implemented by Japan in their recovery from World War II.
The concept of TQM is applicable to academics. Many educators believe that the concept of TQM provides guiding principles for needed educational reform. Education is a fast moving commodity in the market and is mainly business oriented which means it should give some profit to the undertaker. TQM is a philosophy for perfection and continuous improvement in services offered to someone or one’s own performance. The TQM principles which are most salient to educational reform are as follows.

**Synergistic relationship**: According to the principle, an organization must focus, first and foremost, on its “suppliers” and “customers”. In other words, teamwork and collaboration are essential. The concept of synergy suggests that performance and production is enhanced by pooling the talent and experience of individuals. In a classroom, teacher-student teams are the equivalent of industry’s front-line workers. The product of their successful work together is the development of the student’s capabilities, interest and character.

**Continuous improvement and self evaluation**: TQM emphasize self-evaluation as part of the continuous improvement process. In addition, this principle also laminates to the focusing on students’ strengths, individual learning styles, and different types of intelligences. A system of ongoing process. The recognition of the organization as a system and the work done within the organization must be seen as an ongoing process. Quality speaks to working on the system, which must be examined to identify and eliminate the flawed processes that allow its participants to fail.

**Regulation Bodies on Pharmacy Education**: There is no doubt that currently there is enormous gap existing between education and practice of pharmacy. Most of the academic institutions providing education in pharmacy are away from practice environment. The overall basis of pharmacy education is still extra biological synthesis, physicochemical studies, analysis, and manufacturing aspects of drug. It is a common feeling that the medical practitioner is better placed for pharmacists’ job than the pharmacists themselves. The dispensing services are poor. The syllabus and duration of the two–year diploma course in pharmacy education in India is completely outdated and irrelevant in the present industry context. It is a heterogeneous mixture of clinical and industrial subjects. Since clinical subjects are there PCI comes into the picture and AICTE came in because of industrial orientation of pharmacy syllabus. Pharmacy as a nascent science developed like this in the last country. During 1940s and 50s, hospitals and industries were established in large numbers in India.
Consequently, pharmacists and pharmaceutical chemists were required in huge numbers. Hence pharmacy education was developed in such away to satisfy the requirement of industry and hospital. Short term compounders and or D.Pharm. Course to satisfy the needs of hospital and medical shops and B.Pharm. Course for the industry were started. This is provided by the fact that in the last few decades D. Pharm holders are not employed by the industry and B.Pharm holders are not many numbers in hospital or medical shops. In the West, pharmacy education is patient-oriented and is responsible for Healthcare management, while in India pharmacy education is industry-oriented. Nearly 55 per cent of the jobs are available in the industry sector while 30 per cent in education.

While the justification for focusing pharmacy education on Industrial Pharmacy after attaining national freedom was valid, its review to make it relevant in contemporary scenario is already too late. Our present system has produced half a million “qualified” pharmacists but not many “trained” professionals. This has effectively led to a situation where neither there is a need felt by the society nor is there anyone, available to fulfill that “professed” need. This situation feeds on itself to such an extent that any attempt to keep one’s knowledge updated and work professionally has strong economic disincentives in Indian retail pharmacy practice. Gravity of the situation dawns upon us when we think about petitions filed in High courts that propose scrapping of the Pharmacy Act because the pharmacists – according to petitioners – do not play any role other than selling the drugs like all other commodities. There is virtually complete lack of any training or incentive to professionalize – as a result of which even the most enthusiastic pharmacists gradually convert into mere traders. The uninspiring implementation of statutory provisions has led to a cancerous proliferation of retail drug shops and the situation now threatens the profession itself. The retail pharmacist shall be relevant to the society “only” if he can make a difference to the patient – by providing him information about drug usage to achieve better outcome than the patient obtains by uninformed usage of drugs.

Each pharmacy institute should operate a model pharmacy; this would not only improve the image of pharmacists in Indian society but provide an opportunity for pharmacy students to train in community practice. The minimum wages established by state governments for pharmacists working in drugstores should be properly implemented and periodically revised. Even though medicines are now dispensed in the
manufacturer’s original pack wherever possible, additional labeling should include
generic name and strength, dose and frequency, date of dispensing, name of patient,
name and address of dispenser and pharmacy, and date after which the product in not to
be used. Finally, to improve patient compliance, oral or written instructions should be
provided by the pharmacist. Although raising the minimum qualification of registered
pharmacists to the B.Pharm, degree is desirable, the economics of employing
pharmacists in drug stores, particularly in remote rural areas, need not be considered.
Even if standards for good pharmacy practice are set in India, it will take years to meet
them fully, until then, pharmacists, in hospital and community setting need to take steps
on their own to improve their image and protect the health of patients and the public.

3. Teacher Education in India

There has been a great expansion of higher education over the years. Today, there are more than 200 universities and 8000 colleges. Kothari Commission remarks
“The destiny of India is being shaped in its class rooms.”

No doubt education plays a significant role in nation’s development but the quality of education is greatly
determined by the quality of teachers, therefore, great efforts were made and skill are
being made to improve the quality of teacher education. Some of the problems
concerning teacher education are given below.

1. **Problems of Selection** : Defects of selection procedure lead to deterioration of
the quality of teachers. Better selection method would not only improve the
quality of training but also save the personal and social wastage.

2. **Deficiencies of small time period provided for Teacher’s training** : In India,
this period is of one year after the graduation – the effective session being of
eight to nine mothers. The main purpose of teacher education programme is to
develop healthy attitude, broad based interest and values. It is not possible
during the short duration of nine months.

3. **Incompetency of student teachers** : The existing training programme does not
provide adequate opportunities to the student teachers to develop competency
because the organizers of teacher’s training programme are not aware of the
existing problems of schools. Therefore there should be a close matching
between the work schedule of the teacher in a school and the programme adopted for teacher preparation in a training college.

4. **Defects concerning papers**: A student teacher should know the meaning of education, its objectives, the socio-cultural and politico-economies background, the principles that guide construction of the curriculum etc. But a proper preparation towards a good orientation is impossible in a short duration. Following steps may be taken in this connection.

   (a) allowing more time to learners for good reading and sound build up of the intellect and attitude,

   (b) pruning the existing course

   (c) arranging for exchange of experience than merely attending lectures

   (d) changing the mode of testing inputs

   (e) the content most have direct implications in the daily school teaching

5. **Problems of practice teaching**: The ratio of marks between theory and practice generally retains of 5:2 although teaching practice plays a significant role in B.Ed., Programme. Inspite of all kinds of elaborate arrangements regarding practice in teaching, student teachers are non-serious to the task of teaching, deficient in sense of duty irresponsible, aimless, indifferent to children, lacking innovative measure in teaching which are great obstacles in the development of pedagogical skills.

6. **Problem of supervision of teaching**: The supervisory organization for practice teaching aims at bringing improvement in the instructional activity of the student teachers by using various techniques and practical skills in teaching and helps them to develop confidence in facing the classroom situations. This is done through following types of supervisions:

   (i) **Supervision before classroom teaching**: It aims at guiding in planning their lessons, learning to organize contents, formulating suitable gestures and developing other related skills. At present the lesson plans are checked superficially and no discussion is made by the subject method specialist.
(ii) **Supervision during the classroom teaching**: It is done by teachers who are not method specialist generally. These supervisors offer descriptive type of criticism, while constructive type is desirable. Their remarks are related to the general personality of the student teachers. The percentage of lessons supervised by the subject method specialist varies from 5 per cent to 25 per cent due to faulty staffing pattern, lack of time, too many lessons to be supervised, defective time table etc. here, the school teacher should be assisted by the college supervisor in his work. Frequent conferences and consultations between them will help to relate them to practice and the student teacher will improve the performance in a realistic school setting.

7. **Lack of subject knowledge**: The B.Ed., programme does not emphasize the knowledge of the basis subject. The whole teaching practice remains indifferent with regard to the subject knowledge of the student teacher.

8. **Faulty method of teaching**: In India teacher education are averse to innovation and experimentation in the use of methods of teaching. Their acquaintance with modern class room communication devices is negligible.

9. **Isolation of teacher’s education department**: As has been observed by education commission, the teacher education has become isolated from schools and current development in school education. The schools consider the teacher education department as an alien institution and not a nursery for the professional development of school teacher. This department only observes the formality of finishing the prescribed number of lessons no caring for the sounders of pedagogy involved in the procedure.

10. **Poor academic background of student-teachers**: Most of candidates do not have the requisite motivation and an academic background for a well deserved entry in the teaching profession.

11. **Lack of proper facilities**: In India, the teacher education programme is being given a step-motherly treatment. About 20 per cent of the teacher education institutions are being run in rented buildings without any facility for an experimental school or laboratory, library and other equipments necessary for a
good teacher education department. There are no separate hostel facilities for student teachers.

12. **Lack of regulations in demand and supply**: The State Education Department have no data on the basis of which they may work out the desired intake for their institutions. There is a considerable lag between the demand and supply of teachers. This has created the problems of unemployment and under-employment.

13. **Inadequate Empirical Research**: In India, research in education has been considerably neglected. The research conducted is of inferior quality. The teacher education programmes are not properly studied before undertaking any research.

14. **Lack of facilities for professional development**: Most of the programmes are being conducted in a routine and unimaginative manner. Even the association of teacher educators has not contributed anything towards development of a sound professionalization of teacher education in the country.

15. **Insufficient financial grants**: In most of the states teacher education is still being run by the fee collected from student teachers, as the share of the state grant is too small. Some suggestions to remedy the problem of teacher education.

Since the teacher is the pivot of the entire educational system and is the main catalytic agent for introducing desirable changes in the teaching learning process, all attempts need be made for motivating teachers to become innovative and creative. It does without saying that a self motivated and really industrious teacher can utilize his own resources to keep himself abreast of new knowledge and skills.

4. **Management Education in India**

Management education in India has grown considerably over the last 45 years to keep pace with the growing demand. There are over 1,250 approved business schools, 1,25,000 full times and 1,00,000 distance MBA students and nearly 2 lakh MBA aspirants take the Common Admission Test every year.
Indian business schools vary widely in terms of the caliber of the faculty, quality of curriculum and infrastructure, and placement record. A few of the schools, including the Indian Institutes of Management, have built up a reputation for high quality education and their graduates compete successfully for global placement opportunities. However, academic standards of the most of the business schools are pathetic. Indeed at the low end of the spectrum we find outfits which charge exorbitant fee from gullible students but provide negligible academic value add.

**Academic Standards**: The immediate challenge for management education is to enhance the academic standards across the board to create a reasonably large pool of good quality institutions. For upgrading the quality of education, paucity of good faculty is the major bottleneck. This problem can be addressed by having strong doctoral programme sin our top 20 business schools. In offering doctoral programs top Indian schools should collaborate with each other and with schools abroad making use of new technologies. Rating and accrediting agencies have to focus on the lower end of the spectrum of business schools, so that there is stringent enforcement of quality standards, leading hopefully to closure of substandard teaching shops.

**Curriculum and Soft skills**: Regarding content, management schools the world over have been modifying their curricula. Growing globalization of business has led to greater international focus in the curriculum incorporating courses in global leadership, diversity management, managing across cultures, etc. One of the emerging trends in business is the availability of large amounts of micro data through increasingly pervasive use of information technology. To make use of this data for managerial decisions, knowledge of quantitative data analysis and modeling needs to be strengthened. It has been difficult for most schools to balance these two approaches in their curriculum. It is not even clear whether the two sets of skills should coexist in the same person or, like many large corporations do, a team of backroom analytical boys can support the field savvy soft-skilled frontline managers.

Compared to some other discipline wherein knowledge generation and its dissemination through education sets the direction for application of knowledge in the field, management as a discipline has been a lot more reactive to its environment. Much greater emphasis is needed, especially in India, on basic and applied research for management education to lead practice.
5. Legal Education in India

Bar Council of India and the Universities principally regulate formal legal education endeavouring to produce lawyers in India. The problems and challenges facing legal education in India have been time and against studied. Law Commission of India 14th Report (1958) and 184th Report (2002) and National Knowledge Commission Report in 2010 are notable apart from the several High Court and Supreme Court Judgments, and the various seminars and conferences held throughout the country.\(^{25}\) Law Commission of India felt that “Legal Education is fundamental to the very foundation of the judicial system” and took up the study of legal education suo motu. Legal Education is influenced by a multitude of factors like –

1. Governmental Policy
2. BCI
3. UGC
4. Affiliating Universities
5. Private Governing Body of Law Colleges
6. National Limitation Policy
7. Development in Legal Profession
8. Developments in the Legal System
9. The kind of students who enroll
10. The Caliber and Commitment of the faculty
11. The Infrastructure available
12. Technological advancements
13. The Developments in other fields of Education

The proposed All India Bar Exam reflects on the distrust BCI has on the law colleges and universities recognized by BCI, especially considering the fact that the syllabus for the exam is the same as that for the LLB Course. In one open book examination for 3 ½ hours BCI proposes to decide on whether the law graduates shall be eligible for the certificate of practice. The Law Commission, the National Knowledge Commission and the Supreme Court called for the reintroduction of the bar exam. All these show that all is not so well in legal education.
Role of Law Teachers: “Teaching profession is the mother of all professions” it is said. BCI Rules on standards of Legal Education fail to effectively provide for the qualifications, conditions of service, selection, pay perks and promotions of law teachers and principals of law colleges. Even though BCI seems to permit judges and advocates without LLM to be teachers, this is confined to part timers and the full time teachers are governed by the UGC norms and guidelines because BCI has washed off its hands. Law teachers are put on par with teachers teaching arts, commerce and science for under graduates as if LLM is equivalent to MA, M.Com., and M.Sc. This wholly unfair considering the fact that LLM is 3+3+2/5 + 2 years of study after 10 + 2 whereas MA/M.Com/M.Sc. is only 3 + 2 years after 10 + 2. Neither weight-age nor benefits accrue to law teachers on the following – completing LLM in first attempt, having university ranks, taking up post graduate studies in allied subjects like politics, economics, human rights etc. It appears that Arts teachers may get a benefit for completing LLM.

Full time teachers are barred from practicing Law under the BCI rules but the rules do not provide for non-practice allowance. These are the days when school teachers and college teachers demand non-practice allowance for not engaging in tuition classes. NET/SET have become proud qualifications to be put after one’s name along with university degrees acquired. Unfortunately NET/SET is not able to guarantee communication skills and a passion for teaching. It is the students who suffer when good teachers cannot be appointed only because they have not cleared NET/SET. BCI should study the NET/SET process, curriculum and evaluation and determine its desirability as a qualification for law teachers. It is pertinent to note that AICTE, MCI, Architects’ Council of India and Nursing Council of India do not require NET/SET for teachers of their education.

A teaching job may help a teacher but teacher training will help the students. The initial batches tutored by the teacher suffer and sacrifice in silence till the teacher wakes up and matures. Making attendance compulsory and sending untrained teachers to the class make both the teacher and taught miserable. Teaching involves talking but teaching is much more than talking. Law teachers need training (before they start teaching) on teaching methods and sufficient practice in them because teachers has a great role in making education optimistic, enjoyable and mutually rewarding exercise. Teachers ought not to be paid just for their qualifications with effectively carrying out
their jobs well. There should be a training period of 3 – 6 months during which the pay shall be trainee pay and not on scale.

Law teachers need proper incentives. NKC is of the view that current UGC scales one not attractive. Appropriate rewards and promotional schemes reflecting performance and not influence shall be put in place. Academicians should get significant roles in judiciary and statutory bodies. Under the constitution of India a distinguished jurist may be appointed as a Supreme Court Judge but not as a High Court Judge. This appears strange and requires reconsideration. But government does not seem to see any distinguished jurist for appointment. Should not be universities and BCI play a role in identifying the jurists? Universities should consider active participation of law teachers in law reform by organizing discussions on bills and amendment bills and forwarding recommendations.

Law colleges are not sanctioned enough number of full time lecturers. Considering the prevailing UGC norms on work loan and the BCI norms on the number of lectures per subject, colleges requiring 16 full time lecturers are sanctioned 3 in Mumbai. The work pressure stands in the way of research and publications and the conduct of national and international seminars. Staffing pattern should be reasonable and uniform. BCI nowhere rules about CHB teachers whereas law colleges engage such teachers. The BCI rules stipulate teacher-student ratio as 1:40 but does not clarify whether part-time or CHB teacher is a teacher for this purpose. UGC norm prescribing 5 hours daily work at college for fulltime teachers is insufficient. Out of 30 hours in a week 20 will go in lecturers and hardly time is left out for other activities and research. Research and publication should be compulsory for fulltime teachers.

Education is the guidance of students from one level of knowledge to another. In this process the teachers play crucial role. Role of the teacher is progressively being broadened from that of the expert who imparts knowledge to one that includes a mentor or guide, one who extends students’ deep understandings and facilitates the acquisition of higher order thinking skills and creative problem solving skills – skills that are critical for the development of an innovative culture for tomorrow. Taking care of teachers by ensuring appropriate working environment and service conditions is inevitable in the path of improving any education.
Legal Education – Curriculum: Curriculum is an organized academic framework to facilitate the teaching – learning process. BCI has listed 21 compulsory papers (30 under 2008 rules) and several optional papers. But syllabus is too framed by BCI. Syllabus is left to the universities and this accounts for the various different syllabuses for the same subject throughout India. In the 2008 rules BCI has listed out about 85 optional subjects to name a few. Foreign trade, Law on infrastructure development, agriculture, farming and cultivation. The rules were to be implemented from 2009-2010 batches. “Labour Law” may be just the ID Act or some 20 Labour Legislations! BCI should take on this more seriously.

BCI is silent about the vernacular medium. 2008 rules indicate that BCI is aware of the fact that many universities accept vernacular language as a medium of examination. The rules make English (100 marks) Paper compulsory for universities which allow students to have vernacular language as medium of examination. NKC in its report does not care to express anything in this regard. The difficulties in providing lectures in vernacular language, framing question papers/conducting moot courts and viva and assessment of answer books can be overcome. The real problem lies in the fact that references and authorities are not available in vernacular languages.

Regarding curricular, co-curricular and practical training activities of colleges there is no proper academic audit. Reporting procedure (to BCI) for practical training through yearly reports yield no benefits, there is no feedback or suggestions/instructions coming forthwith.

While the society is reeling under sharp practices in the profession, the curriculum pays lip service to the inculcation of ethics and values. The professional ethics is merely a part of I year (3 year course)/III year (5 year course) practical training. NKC has observed that Legal Education must inculcate the need to observe the highest standards of professional ethics and a spirit of public service. Legal education has to catch up with this objective.

Curricular framework will be of no aid if the examination is not tough enough compelling (1) study of good books, references (2) updating (3) regular studies and discussions in the classrooms. Question papers are not creative and facilitate students to
study a few topics from buzzer notes and pass with good marks also. We need to take care when we certify and hold out to the society that a particular person is qualified in law. Question papers do not adequately reflect the new topics, amendments included in the subject. Example: no questions are asked on lobbying role of media, mediation, conciliation in administrative law and no question appear on business self regulation or PIL on consumer protection in Mumbai University even five/six years after revision of syllabus.

It is the need of the day to segregate students who are seriously desirous of taking up legal practice and others who are interested in liberal education in law. Massey rightly observed that legal education has become mass education rather than a specialized training. University shall offer a variety of course in law. The lack of initiatives in this direction has been largely responsible for dilution of standards in professional legal education. NKC has observed that Open University system must also cater to legal education.

**Accreditation of Law Colleges**: UGC National Assessment and Accreditation Council assesses and accredit the colleges and universities. State governments have made accreditation by NAAC compulsory although no action is taken for non-compliance. The oldest law college in the country is also not accredited. NAAC does not classify institutions and does not apply different criteria for accreditation of different classes of institutions. But some kind of accreditation is a must for law colleges, as this would facilitate periodical introspection into the quality of academic activities, infrastructural facilities and the student-institution relations.

National knowledge commission in its report has lamented that law institutions are far from standards. It has called for a rating system on criteria like facilities, courses, instructors, infrastructure etc., and for closing down legal education schools with poor standards. BCI has in the 2008 rules on legal education provided for an accreditation system/performance rating system by its Legal Education Committee on a voluntary basis. The performance analysis shall have three components – academics, administration, and financial on the basis of past 5 years record. The accreditation will be valid for 5 years. BCI may do it self or may cause accreditation done through NAAC. The rating system will supplement the audit and make the institutions more transparent, law abiding and accountable.
Betterment of legal education is directly dependent on BCI’s intervention through capable leadership, adequate audit and support, including financial. BCI may be replaced by a special Standing Committee on Legal Education to the Independent Regulatory Authority on Higher Education as recommended by the National Knowledge Commission.

**Regulatory Framework of Higher Education in India**

Universities in India are set up either through state legislation or through the acquisition of a ‘Deemed University’ status through UGC. While a number of universities have Deemed University status, institutions offering traditional undergraduate degrees do not have this option open to them. In a Supreme Court judgement in the Chattisgarh case, the Court had decreed that each University set up should not only conform to the UGC norms but also be created through a legislation. This makes setting up of universities not only a long and tedious process but also a costly one. In a similar way, AICTE used to collect a deposit per course of up to Rs 50 lakh, which was held in a joint account for 10 years. Such measures increase the cost of setting up institutions.

There have been some court decisions in India which could be considered regressive. In a recent decision in the ‘State of Andhra Pradesh vs. JB Education Society’. The Supreme Court held that consent of State Government is necessary before starting an Engineering College and AICTE cannot give such consent on its own. In fact, the judgement has gone out of the way to give quasi-monopoly power when it states “the State Authorities can alone decide about educational facilities and the needs of the locality. If there are more colleges in a particular area the State would not be justified in granting permission to one more college in that locality.” With this, the Supreme Court has done away with the concept of educational centres. Many areas like Boston in the USA have grown as educational centers and provide many common facilities and an academic environment conducive to higher education. Agglomeration of education institutions has been well accepted worldwide and the State of Haryana has declared setting up of an ‘Education City’ in its State. All this will go against the spirit of the Supreme Court judgement. Karnataka, Andhra and Tamil Nadu in India are examples in this context where many private colleges have found a base in a region and are doing well.
Regulation, therefore, needs to be well structured and thoroughly researched to take full account of relevance, requirements, practical constraints and market realities. The objective of encouraging growth of educational institutions rather than restricting them should not be lost sight of. The Honourable Supreme Court has once again been restrictive in its judgement in Tamil Nadu vs. Adhiyaman Educational & Research Institute in which it has further defused the powers of the UGC. With this judgement, it has gone in for harmonization of education to remove disparities of standards and also for future occurrence of such disparities. With this judgement, the concept of distinct quality of each institution gets a blow and should not be accepted.

Education is no longer a uniform harmonized affair. Higher education offers a wide variety of subjects and with continuing education it needs to be demand driven. In this context, while we need to reduce regulation at entry point, we do not need to bring in the concept of accreditation.

**Higher Education in India and Challenges**

Although there have been challenges to professional education in the past, these most recent calls for reform may provide a fundamental change in professional education. This change may not occur as a direct response to calls for greater transparency and accountability, but because of the opportunity to reflect on the purpose of professional education, the role of colleges and universities in the new millennium, and emerging scientific research on how people learn. These disparate literatures have not been tied together in a way that would examine the impact of fundamental change from the policy level to the institutional level and to the everyday lives of college and university administrators, faculty and students. Now the time has come to create a second wave of institution building. We need higher educated people who are skilled and who can drive our economy forward. When India can provide skilled people to the outside world then we can transfer our country from a developing nation to a developed nation very easily and quickly.

India’s higher education system is the world’s third largest in terms of students, next to China and the United States. Unlike China, however, India has the advantage of English being the primary language of higher education as compared to China. The main governing body at the tertiary level is the University Grants Commission (India), which enforces its standards, advises the government, and helps coordinate between the Centre and the state. Universities and its constituent colleges are the main institutes of
higher education in India. At present in 2011, there are 227 government-recognized Universities in India. Out of them 32 are central Universities, 109 are deemed Universities and 11 are Open Universities. Most of these Universities in India are have affiliating colleges where undergraduate courses are being taught. According to the Department of higher education government of India, 16,885 colleges, including 1800 exclusive women’s colleges functioning under these universities and institutions and there are 4.57 lakh teachers and 99.54 lakh students in various higher education institutes in India. Apart from these higher education institutes there are several private institutes in India that offer various professional courses.

Some institutions of India, such as the Indian Institutes of technology (IITs), have been globally acclaimed for their standard of education. The IITs enroll about 8000 students annually and the alumni have contributed to both the growth of the private sector and the public sectors of India. However, India has failed to produce world class universities like Harvard and Cambridge. According to the London Times Higher Education (2009)- Quacquarelli Synods (QS) World University rankings, no Indian University features among the first 100. But universities in East Asia have been included in the first hundred. Hong Kong has three, ranked at 24, 35 and 46; Singapore two ranked at 30 and 73; South Korea two ranked at 47 and 69 and Taiwan one in the 95th position. Notably, China is no Indian university of Delhi at 291.

A recent evaluation of universities and research institutes all over the world, conducted by a Shanghai university, has not a single Indian university in the world’ top 100 while China has six. The Indian Institute of Science, Bangalore, comes in somewhere in the top 400 and IIT, Kharagpur, makes an appearance after that. Yet this decisive edge also has its shortcomings. Besides top rated universities, which provide highly competitive world class education to their pupil, India is also home to many universities, which have been founded with the sole objective of making easy money. UGC and other Regulatory authorities have been trying very hard to extirpate the menace of Private universities which are running courses without any affiliation or recognition. Students from rural and semi urban background often fall pre to these institutes and colleges, Today, Knowledge is power. The more knowledge one has, the more empowered one is. According to the University Grants Commission (UGC), India needs 1500 more universities with adequate research facilities by the end of the year 2015 in order to compete the global market.
The country lacks the critical mass in higher education. Its gross enrolment ratio (GER) is a mere 11 per cent compared to China’s 20 per cent, the USA’s 83 per cent and South Korea’s 91 per cent. This means that in comparison to India, China has double the number of students pursuing higher education. The Eleventh five Year Plan envisages increase in the Gross Enrolment ratio (GER) in higher education to 15 per cent of the population in the age cohort group of 18-24 years by 2011-12. This requires a substantial increase in the number of institutions and consequently would require an adequate number of teachers for importing education. Failure to redress the faculty shortage would hamper the achievement of the targets for increase in GER set out by Government.

The overall scenario of higher education in India does not match with the global Quality standards. Hence, there is enough justification for an increased assessment of the Quality of the country’s educational institutions. Traditionally, these institutions assumed that Quality could be determined by their internal resources, Viz., faculty with an impressive set of degrees and experience detailed at the end of the institutes admission brochure, number of books and journals in the library, an ultra-modern campus, and size of the endowment, etc., or by its definable and assessable outputs, viz., efficient use of resources, producing uniquely educated, highly satisfied and employable graduates.

Critical appraisals undertaken by the governmental committees and independent academicians have highlighted the system: ‘increasing educated unemployment; weakening of student motivation; increasing unrest and indiscipline on the campuses; frequent collapse of administration; deterioration of standards; and above all, the demoralizing effect of the irrelevance and purposelessness of most of what is being done. While the politicians and policy makers have often spoken about the need for radical reconstruction of the system, what has been achieved in reality is only moderate reformism.

At present, the world-class institutions in India are mainly limited. Most of the Indian colleges and universities lack in High-end research facilities. Under-investment in libraries, information technology, laboratories and classrooms makes it very difficult to provide top quality instruction or engage in cutting-edge research. This gap has to be bridged if we want to speed up our path to development. the University Grant Commission of India is not only the lone grant giving agency in the country, by also
responsible for coordinating, determining and maintaining the standards in institutions of higher education. The emergence of a worldwide economic order has immense consequences for higher education. The emergence of a worldwide economic order has immense consequences for higher education more so under the changes that have taken place at the UGC, All India Council for Technical Education (AICTE), Distance Education Council (DEC), Indian council for Agriculture Research (ICAR), Bar Council of India (BCI), National Council for Teacher Education (NCTE) Rehabilitation council of India (RCI), Medical Council of India (MCI), Pharmacy Council of India (PCI), Indian Nursing Council (INC), Dentist Council of India of India (DCI), Central Council of Homeopathy (CCH), the Central Council of Indian Medicine (CCIM) and such other regulatory bodies from time to accommodate these development and yet maintain quality students in higher education. It is time for all those who are concerned with policymaking, planning, administration and implementation of higher education to revitalize the very thinking on the subject and put it on the right track.

After recording growth rate of around 9 percent for the three consecutive years, India is now considered to be one of the most promising economies of the world. While, higher education gives India an edge in the world economy as evident from availability of the skilled manpower, and research scholars working abroad, unemployment, illiteracy and relative poverty continue to be the major deterrents to realize her potential in human resources. The taskforce constituted by world Bank and UNESCO during 2000 has also observed that higher education helps increase wages and productivity that directly enrich individuals and society. The prospects and development in the higher education sector in India needs a critical examination in a rapidly globalizing world. Expansion, inclusion and excellent were the three objectives of higher education policy of Government of India. The government had taken many steps to increase student enrolment in higher education and quality improvement in higher educational Institutions.

Keeping in view the government has constituted a knowledge Commission to suggest measures to alleviate the problems that higher education sector is afflicted with and make India a knowledge super power in the global economy. But the government is at a crossroad. While there is a need for an expansion of the higher education sector, resource constraint for both the Centre and the states poses challenge to ensure quality education even in the existing institutions. The government after pursuing neo-liberal
policies is keen to open the higher education sector to the private providers, either through public-private participation or foreign direct investment in higher education. The society is divided. While one section is opposed to commodification of education, the other section thinks that involving the private sector is the only way out. How would the higher education sector evolve in response to these challenges is a crucial issue for us to understand and anticipate. How is the sector contemplating changes to engage with the world? If India is to be a global economic powerhouse it is essential to nurture this higher education sector.

As India strives to compete in a globalize economy in areas that require highly trained professionals, the quality of higher education becomes increasingly important. So far, India’s large, educated population base and its reservoir of at least moderately well trained university graduates have aided the country in moving ahead, but the competition is fierce; from china in particular. Other countries are also upgrading higher education with the aim of building world class universities. Even the small top tier of higher education faces serious problems. Many IIT graduates, well trained in technology, have chosen not to contribute their skills to the burgeoning technology sector in India; perhaps half leave the country immediately upon graduation to pursue advanced studies abroad, and most do not return. A stunning 86 percent of Indian students in the fields of science and technology who obtain degrees in the United States do not return home immediately graduation. A body of dedicated and able teachers work at the IITs and IIMs, but the lure of jobs abroad and in the private sector makes it increasingly difficult to lure the best and brightest to the academic profession.

The present system of higher education does not serve the purpose for which it has been started. In general education itself has become so profitable a business that quality is lost in the increase of quantity of professional institutions with quota system and politicization adding fuel to the fire of spoil system, thereby increasing unemployment of graduates without quick relief to mitigate their sufferings in the job market of the country. So, the drawbacks of the higher education system underscore the need for reforms to make it worthwhile and beneficial to all concerned.

Most observers agree that Indian higher education, the significant and impressive developments of the past few decades notwithstanding, faces major challenges in both quantitative and qualitative terms. The clearest and boldest statement of this issue can be found in the “Report to the Nation 2006” of the National
Knowledge Commission which concludes that there is a quiet crisis in higher education in India. Recognizing this dual challenge, the Indian Prime Minister, Manmohan Singh, severely criticized in a recent speech the serious qualitative deficiencies in Indian higher education while at the same time announcing plans for a major expansion of the system. Reflecting on the findings of a report by the National Assessment and Accreditation Council, he expressed his concern over the fact that two thirds (68%) of the country’s university and 90 percent of its colleges are ‘of middling or poor quality” and that well over half of the faculty in India’s colleges do not have the appropriate degree qualifications. Knowledge is the base for overall growth and if the nation has to be competitive and to be at par with the globalization pace, we will have to respond to the market forces.

According to a study only 25% of engineering graduates are directly employable. Quality of education delivered in most institution is very poor. While India has some Institutions of global repute delivering quality education, such as (Indian Institute of Management) IIMS and (Indian Institute of Technology) IITs, we do no have enough of them. It has very narrow range of course options that are offered and education is a seller’s market, where is no scope of incentive to provide quality education. There is clearly a lack educated educators and teaching is not an attractive profession; it’s a last choice in terms of career. Number of Ph.D.s produced each year is very low and those required by academia is far higher. In fact, at many institutions fresh graduates are employed to teach, leading to poor quality of classroom instruction. Most of the education institutions especially in states such as Maharashtra and states in south India are owned by politicians. This Education system which is highly regulated by the government has been set up to benefit politicians.

The growth of higher education in India has been largely guided by the serviceable prerequisite of the economy. After independence, the role of state in planning out a development path and also in building higher education institutes was guided by mutuality of purpose. Most observes of higher education in India feel that performance of higher education in India feel that performance of higher education institutions has been less the satisfactory in terms of access, equity and quality. Now there is an urgent need to work for the development of the educational sector to meet the need of the emerging opportunities, increasing younger generation population and challenges of the 21st century.
Challenges of Higher Education in India

Since we have got independence we are facing challenges to establish a great and strong education system. Various governments came and gone. Of course they tried to establish new education policies in the system but this is very sad to dictate that they were not sufficient for our country. Still we are facing lot of problems and challenges in our Education System. India recognizes that the new global scenario poses unprecedented challenges for the higher education system. The University Grants Commission has appropriately stated that a whole range of skills will be demanded from the graduates of humanities, social sciences, natural sciences and commerce, as medicine or engineering.

India can no longer continue the model of general education as it has been persisting in for the large bulk of the student population. Rather it requires a major investment to make human resource productive by coupling the older general disciplines of humanities, social sciences, natural sciences and commerce to their applications in the new economy and having adequate field based expense to enhance knowledge with skills and develop appropriate attitudes.

There are many basic problems facing higher education in India to day. These included inadequate infrastructure and facilities, large vacancies in faculty positions and poor faculty thereof, low student enrolment rate, outmoded teaching methods, declining research standards, unmotivated students, overcrowded classrooms and widespread geographic, income, gender, an ethnic imbalances. Apart from concerns relating to deteriorating standards, there is reported exploitation of students by many private providers. Ensuring equitable access to quality higher education for students coming from poor families is a major challenge. Students from poor background are put to further disadvantage since they are not academically prepared to crack highly competitive entrance examinations that have bias towards urban elite sciences and rich students having access to private tuition’s and coaching. Education in basic sciences and subjects that are not market friendly has suffered.

Research in higher education institutions is at its lowest ebb. There is an inadequate and diminishing financial support for higher education from the government and from society. Many colleges established in rural areas are non-viable, are under-enrolled and have extremely poor infrastructure and facilities with just a few teachers.
A series of judicial interventions over the last two decades and knee-jerk reaction of the government—both at the entire and state level and the regulatory bodies without proper understanding of the emerging market structure of higher education in India has further added confusion to the higher education landscape in the country. There is an absence of a well-informed reform agenda for higher education in the country. A few efforts made now and then are not rooted in the new global realities based on compassion and increased mobility of students and workforce.

Time to time system influenced with new challenges and government taken a major role to build the system. But there are many challenges always faced by the government. Some of the leading challenges before the higher education system are continues upgradation of curriculum to keep in pace with rapid growth of science and technology; globalization and the resultant challenges from the international universities; grooming of many private institutions without any method of ensuring maintenance of quality and standard; need for adequate funding to meet the demands of various novel innovative programs; developing a meaningful and purposeful inter-face between the universities, National Research Laboratories, industries, government and society, etc. ICT in higher education policy may not be able to completely overcome all these challenges though it may play a role in information and resource sharing.

There are so many people in various parts of country which are still out of reach. This is when we have emphasize more on our education programs and made our system reachable to all areas. Government has to rethink on these areas to implement more on the polices. Money also plays a vital role for the education system, which needs to unique for all globally recognized syllabus and curricula. Take a look on our constitution, which says that this is the responsibility of central and state government to build good education system. For that we need to have funds. But despite there was a large expenditure on the funds every year on Education where the fund goes and our system remains intact.

Central government prepares policies and plan while responsibility of State government is run those policies on ground. The standard education facilities are higher in the states which are much rich. There is a need to change such defects from the country education system, which only can be influenced by increasing funding and providing better facilities to students. But we know there is always increase in the fund for the education system but never implemented in that area. So we have to work in
this area. Government tries to make different policies, which are implemented, but quality never checked. Majority of fund goes in the pockets of officials working for this. There is a vast need to improve the quality and standards.

The time now it’s to modernize our education system so that our country can get much more technically graduated people which help our country can get much more technically graduated people which can help our country to developed state. Today’s youth always try to go goring for his higher education as they have much better facilities and quality of their system. Can’t we that quality here itself? Our governments trying for various challenges faced but no one is doing well for that. Government came and goes but system remains intact.

Higher education is extremely diverse and the challenges and issues faced by higher education institutions are just sad diverse. The process of education is not merely digesting books. It is also about doing several co-curricular and extra-curricular activities that gives a broader meaning to life in general and education in particular.

There is a lack of universities and institutes for education but one most important fact is that the quality of education is absent in higher education. There are very few teachers and their knowledge is very insufficient. The teachers are not having proper knowledge of subject even and resources to student community are very poor. Students do not have any student-ship ethics, they just want marks in the subject and they study only for grabbing jobs. They are not capable enough to produce new technology. There is a great need to bring quality revolution in higher education. These are just some challenges which should cover all the aspect in the present scenario of education and e have to implement hard on them.

**Problems of Higher Education in India**

As stated above, India has the third largest higher education system in the world, next only to China and the United States. Before Independence, access to higher education was very limited and elitist, with enrollment of less than a million students in 500 colleges and 20 universities. Since independence, the growth has been very impressive; the number of universities has increased by 18-times, the number of colleges by 35 times and enrolment more than 10 times. The system is now more mass based and democratized with one third to 40% of enrolments coming from lower social-economic strata, and women comprising of some 35% of the total enrolments. It
is little more than half a century ever since the government initiated a planned
development of higher education in the country particularly with the establishment of
University Grants Commission in 1953. Thus early 1950’s is a Central and State
Universities in the type of disciplines offered by them.

Among the 104 deemed universities, there is greater diversification. Apart from
majority being in technological discipline, there are universities in specific research
areas such as English and foreign language, yoga, brain research, dairy research, mines,
basic science, neuro science, physical education, fisheries, economics and politics,
development research, armament technology, population science, IT, management,
education, home sciences, rural studies, music, veterinary research, forest research,
drama, planning and architecture, foreign trade, educational planning and
administration.

1. Problem of Enrolment

Enrolment in higher education has been rising steadily although the enrolment
rate has continued to remain low compared even to some of the developing countries of
Asia and Latin America. The growth of enrolment in Tertiary education (at Doctorate,
post-graduate, Degree and Diploma levels) during the period 1980-81 to 2003-04, the
total enrolment growth during 2001-2002 to 2010-2011 under different types of
Management under which the colleges and Universities were functioning. The
enrolment of Boys and Girls at different levels of education for the year 2010-2011
clearly indicates the fall and intensity of the problem.

2. Problem of Financing Higher Education

Higher Education in India has received enormous financial support from both
the Central and the State Governments. At the start of the Planning process in 1950, the
total allocation for higher education was only Rs.170 million which has now gone
beyond Rs.90, 000 million. This impressive increase is offset to some extent by the rise
in prices (inflation) and rise in number of students entering higher education. An
analysis of government expenditure on higher education shows a real annual growth
rate of 7.5% in the 1950s, 11% in the 1960s, 3.4%, in the 1970s, and 7.3% in the 1980s.
(CABE Report 2011)\textsuperscript{31}.

The Plan allocation for Higher Education, which went up to 28\% in the \textit{v} the
plan period, has been slowly going down in subsequent plans and has reached only 6\%
of the total plan expenditure during the Xth plan period. The annual plan allocation
during their Xth plan period and the actual expenditure highlights the priority given in
allocation to Technical education (10.72%) over Higher Education (9.53%) although Higher education sector overspent the allocation whereas the Technical education sector has a significant saving.

The total expenditure on the Revenue Account at all India level during 2005-06 formed 28.33% of the total Gross Domestic Product (GDP) and only 3.01% of the GDP was provide in the budgets of the education departments When the provision for education for all departments including education departments is taken into account this percentage works out to be 3.72%. So far as Expenditure on Higher education sector is concerned, there is some variation in data depending on the source.

It is seen from the CABE report that public expenditure on Higher Education including Technical education has varied between 0.45 and 0.6 of the GDP. This variation could be due to the inclusion of expenditure on HRD training by government departments other than Education in both at the Centre and in the States.

3. Access to Higher Education:

The enrolment rate (GER) for Higher Education which has risen from 0.7% in 1950-51, 1.4% in 1960-61, and 8% in early 2000 is still very low (about 10%) compared to the world average of 23.2%, and an average of 54.6% for developed countries, 36.3% for some countries in transaction, and 11.3% for developing countries. Even the existing EER of some 60% indicates that 40% of students who complete their higher secondary programs do not enter the realm of tertiary education. Even if we increase enrolment rate by 5% every plan period, it would take so more than a quarter century to come close to the level of developed countries.

<table>
<thead>
<tr>
<th>Groups of Countries</th>
<th>GER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Countries in Transaction</td>
<td>36.5</td>
</tr>
<tr>
<td>Developed Countries</td>
<td>54.6</td>
</tr>
<tr>
<td>Developing Countries</td>
<td>11.3</td>
</tr>
<tr>
<td>World</td>
<td>23.2</td>
</tr>
<tr>
<td>India</td>
<td>About 10%</td>
</tr>
</tbody>
</table>

Source: Higher Education in the world 2010, the financing of University, 2010, (Palgrave Macmillan)
4. Quality of Higher Education:

Sri Pranab Mukherjee, President of India, recently raised concern on the quality of education, saying that none of the Indian Universities figure in the top 200 institutions of the world. While addressing the students and faculty of central universities, IITs, NITs and other institutions. Mukherjee said that institutions should take the university ranking process seriously to boost the morale of the academics and the students. In his own words, “My first and foremost concern is the quality of education in our country.”

The standard of higher education has a direct relationship with the development of a nation and the quality of life of its citizens. Two recent surveys conducted by reputed international organizations have brought out the difference in the standards of education between institutions in India and abroad. None of the Indian universities find any place in the top 200 institutions.”

To improve the standards of higher education, Mukherjee said, the quality of teachers the learning capacity of students, and the physical infrastructure should be improved. Mukherjee also thanked National Knowledge Network for helping him reach out to the large number of institutions.

The overall scenario of higher education in India does not match with the global Quality standards. Hence, there is enough justification for an increased assessment of the Quality of the country’s educational institutions. Traditionally, these institutions assumed that Quality could be determined by their internal resources, viz., faculty with an impressive set of degrees and experience detailed at the end of the institute’s admission brochure, number of books and journals in the library, an ultra-modern campus, and size of the endowment, etc., or by its definable and assessable outputs, viz., efficient use of resources, producing uniquely educated, highly satisfied and employable graduates. This view of determining Quality in higher education, popularly termed as the “value-addition” approach, does not measure the competencies students develop through the courses offered. The competencies are recall, understanding, and problem solving. “Recall” amounts to a competency of gaining knowledge by way of reading, viewing, listening, assimilating and demonstrating it when required. “Understanding” is comprehension, which requires explanations and vocabulary development and demonstrating it by giving ideas, predict and evaluate cause and effect. The competency of “problem solving” can be developed by solving text book type of problems and the expertise so developed can be used in handling real-life
situations. The students should understand and accept these concepts, and the level of competency they are expected to attain should also be defined in consultation with them.

As per then Universities sector is concerned, a total of 317 Universities under the purview of UGC only about 50% (164) have been assessed for minimum quality under 12(B) while seeking UGC funding whereas only about 40% (128) have been assessed for more elaborate criteria of quality as per NAAC. A sample study by UGC of 111 universities funded by it has shown that 31% of them fall under. A grade (Higher quality), 52% in B grade Universities generally perform better with respect to number of indicators, which include faculty strength in number per department and quality (PhD degree), and both physical and academic facilities. As per the latest data available NAAC has completed accreditation of 140 Universities (28 more than the above Table), and 3492 colleges (some 700 more than given in table above). An analysis of 2698 colleges accredited earlier is given in Table 24 below which confirms that even under the small number of colleges so far accredited, some 24% are of low quality and one does not know anything about the quality standard of some 80% of colleges under UGC purview. An earlier analysis of performance standard of facilities in NAAC accredited Colleges reveals that performance parameters are better in institutions with A and B+/B+ grades.

Quality Concept in Higher Education: Quality in industries could be defined as adhering to the stated or implied performance requirements of the customer, but with interpretation as varied as the individuals, it is rather difficult to define the Quality in educational institutions. Although, the Quality management concepts in business and in education remain same, there are certain limitations in adopting the corporate methods of Quality management because educational institutes cannot be considered as industry and the products are not their students, but it is the education imparted to the students. Students, their parents, and their future employers are the customers of this product (education). In quality management, the customer is defined as the next person in line. In an educational, students directly receive the teaching services and hence are the customers of the teacher, whereas the faculty and the institute’s administrators are the suppliers of the services. Even the supplier customer concept of Quality management cannot be applied in education because the customers do not understand what is to be acquired, or what is of good quality. The student’s definition of a Quality education, students enjoy learning. Teachers need to discuss such questions, with the students as:
Why are you here? What are you trying to do? What does it mean to you to do it well? How the teacher can help you in doing it well? A teacher has to build up a consensus in a class regarding what constitutes a Quality experience. Once a mutually agreed purpose is established, the Quality management concepts ensure that curriculum coherence increases, education is improved, productivity of teachers is enhanced, and teachers and students find greater joy in their work and are able to make positive contribution to the society. It is, therefore necessary that the institutes of higher education accept the mantra of “Quality” and provide for a standardized assessment of what exactly the students are able to do (that they were not able to do before) as a result of their education.

**Implications of Quality in Higher Education**: Deeming, Juran and Crosby may be given the credit for developing the vocabulary on quality management. Higher education institutions can learn a great deal from these ideas and some of them are:

1. Leadership and commitment of top management plays a significant role in quality improvement.
2. Creating an environment for learning and staff development is crucial to do task right every time.
3. Adopt new philosophies and technologies that can improve the quality.
4. Encourage teamwork and participatory management.
5. Develop a communication strategy to report progress and results.
6. Recognize the efforts of staff without creating a competitive environment.
7. Put appropriate systems and processes in place as per the needs of the stakeholders.
8. Encourage quality circles and a culture of quality.

**Quality Movement in Indian Professional Education**

The Universities Grants Commission (UGC) with its statutory powers is accepted to maintain quality in Indian higher education institutions. Section 12 of the UGC Act of 1956 requires UGC to be responsible for “the determination and maintenance of standards of teaching, examinations and research in universities “. To fulfill this mandate, the UGC has been continuously developing mechanisms to monitor quality in colleges and universities directly or indirectly. In order to improve quality, it has established national research facilities, and Academic Staff Colleges to re-orient
teachers and provide refresher courses in subject areas. The UGC also conducts the National Eligibility Test (NET) for setting high standards of teaching.

Various comities and commissions on education over the years have emphasized directly or indirectly the need for improvement and recognition of quality in Indian professional education system. The concept of autonomous college’s recommended by Kothari Commission (1964-66) has its roots in the concept of quality improvement. Since the adoption of the National Policy on Education (1968), there had been a tremendous expansion of educational opportunities at all levels, particularly in professional education. With the expansion of educational institutions, came the concern for quality. The constitutional amendment in 1976 brought education to the concurrent list making the central government more responsible for quality improvement Stella and Gnamam, 2003). The New Education Policy (1986) emphasized on the recognition and reward of excellence in performance of institutions and checking of Sub-standard institutions. Consequently, the Programme of Action (PoA) in 1986 stated, “As a part of its responsibility for the maintenance and promotion of standards of education, the UGC will, to begin with, take the initiate to establish an Accreditation and Assessment Council as an autonomous body”. After eight years of continues and serious deliberations, the UGC established NAAC at Bangalore as a registered autonomous body on 16th September 1994 under the Societies registration Act of 1860.

The milestones in the emergence of NAAC can be identified as follows:

1986. UGC constituted a 15-member committee n Accreditation and Assessment Council under the chairmanship of Dr. Vasant Gowarikar.
1990 Dr Sukumaran Nari’s project report submitted to UGC that reflected a consensus to have an accreditation agency accountable to UGC.
1992 The revised New Education Policy reiterated all round improvement of educational institutions.
1994 Prof. G. Ram Reddy committee appointed to finalize the memorandum of association and rules and regulation of the accreditation board (July 1994).
1994 National Assessment and Accreditation Council established at Bangalore(September 1994).
The main objectives of NAAC as envisaged in the Memorandum of Association (MoA) are to:

- Grade institutions of professional education and their programs;
- Stimulate the academic environment and quality of teaching and research in these institutions;
- Help institutions realize their academic objectives;
- Promote necessary changes, innovations and reforms in all aspects of the institutions working for the above purpose; and
- Encourage innovations, self-evaluation and accountability in professional education.

Like NAAC (which is responsible for colleges and universities), there are other statutory bodies in India to assure quality in professional education. Some of these are:

- All India Council for Technical Education (AICTE)
- National Council for Teacher Education (NCTE)
- Medical Council of India (MCI)
- Indian Nursing Council (NC)
- Bar Council of India (BCI)
- Rehabilitation Council of India (RCI)
- Distance Education Council (DEC)
- Indian Council for Agricultural Research (ICAR)

The AICTE established the national Board of Accreditation (NBA) in 1994 to accredit programs offered by technical institutions. The NBA accredits programs and it is a voluntary process like that of NAAC. Other professional statutory bodies mostly undertake review exercises to recognize or de-recognize the institutions on the basis of quality audit. Thus, quality issue is on the top of the agenda of Indian professional education.

**Assessment of Quality**: Quality assurance is the responsibility of everyone in an educational institution, though the top management sets polices and priorities. Thus, assuring quality should be a continuous and ongoing process it should not be considered as a one-time activity for accreditation alone. However, accreditation as external quality monitoring (EQM) can be found in all types of professional education systems.37
In spite of the importance of EQM and the credibility attached with the impartial and objective systems. Developing an internal quality assurance mechanism in every educational institution is highly important. It is in fact, this unit within the professional education institution that will prepare the base for EQM. Thus, understanding the criteria of quality assurance and adhering to the best practices become highly significant. Across the world quality assurance is done in the following ways

- Self evaluation;
- Peer review by a panel of experts, usually including a least some external panel members and one or more site visits;
- Analysis of statistical information and/or use of performance indicators or the best practices benchmarking;
- Surveys of students, graduates, employers, professional bodies;
- Testing the knowledge, skills and competencies of students (Harman, 1998).

At NAAC, a four-stage process of external quality monitoring/assessment is undertaken covering:

- Identifying pre-determined criteria for assessment;
- Preparation and submission of the self-study report by the unit of assessment;
- On-site visit of the peer team for Validation of the report and recommendation of the assessment outcome to NAAC; and
- Final decision by the Executive Committee of NAAC (NAAC, 2005).

**Expectations from educational institutions**: Institutes of professional education, through their curriculum, are expected to provide knowledge, know-how, wisdom, and character to the students. “Knowledge” enables them to understand what they learn in relation to what they already know, and creates an ability to generalize from their experience. “Know-how” takes them beyond merely understanding and enables them to put their knowledge to work. “Wisdom” makes them capable of deciding their priorities, ‘Character’ development is the combined effect of knowledge, know-how and wisdom, coupled with motivation. Character development is recognized by certain traits, viz, honesty, integrity, initiative, curiosity, truthfulness, cooperativeness, self esteem, and ability to work alone and in a group. However, most of the educational institutions hardly pay any attention to the development of either wisdom or character. Many educators have not developed wisdom themselves and hence throw up their hands at the thought of imparting it to the students. They think that these elements are
to be taken care of by someone else. Wisdom and character, the two important human qualities, are best developed by making students participate in creative team activities, wherein they learn to set priorities, to work together, and to develop the social skills required in a society where teamwork is essential to success.

The students’ learning can be improved if the teacher’s attention is essentially focused on the teaching/learning process and not so much on their examination results. Measures taken by the academic institutions to standardize their syllabi and align their curriculum could constitute Quality. It requires a well-designed syllabus to meet a mandated set of goals and objectives, an obligatory sequence of topics, and compulsory textbooks, which are formally approved, officially knowledge, and collectively disseminated. Unfortunately, the course curriculum is so strongly oriented towards testing and examination that the while grading the students in any group, 50 per cent of them will be marked in the bottom half and branded “inferior” irrespective of their performance. There is nothing so destructive of the joy of learning than to be told that you are a failure. Then the question arises as to what are we trying to accomplish through grading? Whether the aim is to decide which students should be allowed to go for professional levels of education, where the social cost of talking an inferior student is high and the resources for such education are scarce. Examination results should only help the teachers and the student to jointly decide how to improve the educational processes in the classrooms.

Most of the quality Standards for accreditation state that assessment principles are complementary to the institute’s mission. Clearly defined mission, goals and objective guide faculty, administration, staff, and governing bodies in making decisions related to planning, resource allocation, programs and curriculum development, and definition of program outcomes. These goals and objectives should focus on student learning, other outcomes, and institutional improvement.

The impetus for improving quality of professional education and scrutiny by the accreditation agencies and the corporate employers is gaining momentum in India. There are many important quality management tools and techniques, fully tried out in the industry, which could be adopted in the field of education, to diagnose a system and identify potentials for improvement. Now people have started realizing that there is no other activity that promises more leverage in the improvement of society than the development of a generation that understands Quality and remains equipped to improve it.
The Professional Educational institutions suffer from large quality variation in so much so that a recent Nasscom - Mackinsey Report (2005) has said that not more than 155 of graduates of general education and 25-30% of Technical Education are fit for employment.\textsuperscript{38} Since only a small number of Universities and colleges are eligible for funding by UGC and hence monitoring for quality by NAAC for ensuring quality standards set by it, a vast majority of institutions are under no quality university team visits.

Globalization of professional education services has become an area of key focus for many countries in post WTO scenario. In order to fuel the socio-economic development of the country, professional education is playing a more active role in our country and this requires a paradigm shift in terms of governance and service delivery. Professional education institutions must become more innovative leading to quality institutions of knowledge production and dissemination. Realizing the importance of Professional education, a lot of innovative experiments are being done to improve the performance of this sector. Application of TQM concepts is one of such measures, which will go a long way in revolutionizing the professional education system. This study attempts to theoretically conceptualize TQM in professional education in addition to the problems and perceptions of the stakeholders in the implementation of TQM in selected professional institutions affiliated to Acharya Nagarjuna University.

**Plan of the Study**

This research study is about the TQM and its implementation in professional education with reference to the selected 10 professional colleges affiliated to Acharya Nagarjuna University. There are six chapters in this study. The first chapter is on the growth and working of professional education in India. The second chapter is devoted for the specifying the objectives, hypothesis, research methodology and survey of literature. The theoretical frame work relating to Total Quality Management (TQM) and is impact on the educational sector is the main basis for chapter – 3. In chapter – 4 the discussion will be on the implementation of TQM principles in the selected professional colleges and the opinions of the faculty members of these institutions on TQM implementation on their colleges. The perceptions of the students and parents and their opinions interest and feelings are analyzed in chapter 5. The final chapter was devoted for the summary of findings and suggestions for making the implementation of TQM effective in all the professional colleges.
References

1. Report of Kothari Commission (1966), Govt. of India, pp.497-8


3. Ronald Fitzgerald, TQM in Education, ezinearticles.com


11. 'Simputer for Poor goes on sale', BBC News, Monday March 29, 2004, bbc.co.uk


13. A. Sheshbalaya, Yale Global online:www.yaleglobal.yale.edu)

14. Ashutosh Sheshbalaya, 'Rising Elephant-the Growing Clash with India over white collar jobs and its Challenge to America and the World', Macmillan India, 2005

15. Ramping up in India, Business World, 21 November 2005

16. 'The other MIT', Business Week, 22-29 August, 2005


21. List of Engineering Colleges, Courses, intakes and Last Ranks of candidates admitted in engineering colleges in A.P. Hyderabad – APSCHE.

22. Pawan Agarwal *Engineering Education in India, Changing and Global Realities and Responses* University news, Vol.43, No.39, 2005 Sept.26–Oct 2 P.30


28. NAAC, *Quality Assurance in Higher Education – An Introduction*, Bangalore, India


30. Syam Pitroda, *National Knowledge Commission*


32. Annual Report, MHRD, 2011-12

34. CABE Report, 2011. p.35


36. President concerned about standard of education, Times of India date 1-9-2014.
