

Development of Technical Education in India

(1945 to 1964): A Study

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Abstract

Education is considered as an instrument of Social changes. Development of Society depend on the progress of education which helps to train the people in skilled and semi-skilled activities. Technical skills in India has its roots in ancient times. During ancient India the people were trained in skilled and semi-skilled activities. During Medieval period people also received training in specialized activities. During British rule some of the Technical Institutes were established in order to further the process of colonization. Technical Education in India gathered its momentum from 1944 onwards which witnessed the establishment of Industrial Training Institutes, Polytechnic Institutes and Engineering Colleges. Several education commissions such as Radha Krishnan Commission, Mudalier and Kothari Commission were constituted and recommended a number of provisions to improve the conditions of Technical Education in India. The establishment of large number of Technical Institutes resulted in the development of Socio-economic conditions of India.

Keywords: Ancient India, Medieval India, AICTE, Five Year Plan Report, Radha Krisnan Commission, Mudalier Commission.

Introduction

Education is considered as an instrument of social change. Technical Education is an important component of educational system which acted as an important instrument where people are trained in skilled and semi-skilled activities. Technical Education is also considered as primary and essential input for over all development of Society and Nation. From the second half of the 19th century, technical education in India in general and Bengal in particular have grown in a very slow rate. If as an analysis is done with historical process of development of technical education in India it can be stated that it was laid almost at the same time as in Europe. But its growth in India was very restricted and slow till India became Independent (Sen, 1989; p.189). The development of technical education in India took at two separate levels, one represented by Colleges or Universities and other by Schools which gained importance from 1940 onwards. Technical Education is imparted through different kinds of institutions at three different levels in India.

- Industrial Training Institute (ITI), which conduct trade courses for skilled workers.
- Polytechnic Institutes, which conduct diplomas to produce middle level technicians.
- Engineering colleges, which conduct undergraduate and postgraduate degree courses in engineering and technology.(Palit,1998)

At the end of World War II, India became Independent, Government of India paid close attention to steady growth of technical education up to the end of the Third Five Year Plan (1961-1966). It was realized by the education planners and emphasis on the development of technical manpower was given right from the Five Year Plans (Ravikant, 2005; pp.67-73).The period from 1944 to 1947 became a turning point in the history of technical education in India. Both the world wars required so many number of engineers and technicians in various fields. As a result, the Central Advisory Board of Education appointed a Technical Education Commission to promote the scheme for expansion of the technical education in India (Maharashtra Government Report, 1997)

With the establishment of the All India Council for Technical Education (AICTE) by a resolution of the Government of India (No.f16-10/4.E.1-II) the recommendation made by Central Advisory Board of Education (CABE)(Mukherji,1964;p.284) November 30, 1945 and also the establishment of a Scientific Manpower Committee (SMC) under the Chairmanship of Dr. Shanti Swarup Bhatnagar, Secretary, Ministry of Education and Educational Adviser to Government in 1947, a new trend of development of technical education have been experienced. It helped in the real development in the field of higher technical education in India. The utilization of human resources for industrialization required education in science and training in technical skill. (Agarwal, 1997)

The recommendation of a Committee which is known as Nalini Ranjan Sarkar Committee was established for the growth of higher technical education. The committee made a survey of the entire conditions of technical education in India and also put forwarded great recommendation in respect to the post war reconstruction. The committee submitted a temporary report in 1946 (the report published in 1949). The recommendations of the report were that four higher technical institutions should be established as early as possible, one each in the East, West, North and South. The whole incidence gathered momentum for the development of technical education. It

is very important to note that Indian Institute of Technology was set up in five different places such as Bombay, Kharagpur, Kanpur, Madras and Delhi from 1951 to 1961. (Datta, 1998, pp.1-20) These institutes were modelled on the lines of the structure of Manchester Institute of Technology, USA and the University of Manchester, U.K. It was actually aimed and to train scientists and engineers to develop them as skilled workforce to support them in the economic and social development of India after independence (Saha, 2012; pp109-138).

It has been suggested by the Prof: Hill that the Chief aims of the proposed institutes of Technology would be to provide teachers and research workers of the highest quality (Hill, 1944). In the year, 1948 All India Council of Technical Education (AICTE) with collaboration of Board of studies reviewed the condition and situation of polytechnic education in India. After 1950 most of the Polytechnic Institutes of country started working as per as the norms of the AICTE. It laid down the norms for accommodations, workshops, laboratory and staffs. The Advisory Panel of Engineers and Technologist was compiled to advocate instructions for the steady growth of technical education in India (Report of UEC, Dec 1948 to Aug 1949; p.244).

Several educational commissions such as Radha Krishnan Commission (1948-1949), Mudaliar Commission 1952, Kothari Commission (1964-1966) were formed to revise the various aspects of education in India and these committee made number of recommendations to improve the conditions of technical education. This is the landmark in the development of technical education in India. They made an effective effort to vocationalise and specialize the technical education at polytechnic level which recommended that the polytechnic institutes should be established for those students who have passed higher secondary classes. The principal goal of Radha Krisnan Commission was to fulfill the quality of University education. The principal recommendations regarding the state of Technical Education were submitted on 25 August in 1949. It also emphasized the need for the new types of engineering and technical institutes in India (Dass, 1984; pp.1-2). On the recommendation of AICTE, the Government of India had made a committee known as National Trade Certification Investigation Committee in 1951, on the recommendation of the committee; Industrial Training Institutes were set up in the different states of India including West Bengal. The regional engineering colleges were established with the recommendation of Engineering Personal Committee which was appointed by planning commission in 1955. Seventeen regional colleges were established between 1954-1964 to

promote the technical education and address the manpower need of the region. These colleges first offered degree courses in various branches of engineering and technology. Out of these fourteenth colleges, several facilities have been started with the post-graduation programmes (Agarwal, 1997)

The establishment of Mudaliar Commission (Secondary Education Commission in 1952) under the chairmanship of Dr. A.Lakshmanaswamy Mudaliar suggested that technical education should be started in large number either separately or as part of multi-purpose schools. Such schools requested to be located in close proximity of appropriate industries and they should function in close cooperation with the industry concerned. Junior Technical Schools were established as per the recommendation of Chandrakant Committee (1958-1964).

The Government of India appointed another committee known as Thaker Committee (under the chairmanship of prof. M.S.Thacker, the Secretary of the Ministry of Scientific Research and Cultural Affairs, in (1959-1961) for the improvement of post-graduation and research facilities in Engineering and Technology.(Report of the Working Group,1960;pp1-2) The committee submitted its report in 1961. Some of the important recommendations were to put forwarded (a) to attract the high merit students and scholarships which should be provided to Post graduation courses. (b) Post-Graduation and a research programme should be concentrated in a limited number of institutions as there are limited number of qualified staffs. (c) Relationship should be developed between academic institutions and industry to promote the growth of Technology.

The Five Year Plans brought new changes in the policies which were responsible for the promotion of technical education in India. Therefore all successive Five Year Plans (FYP) put emphasis on certain particular aspects of Technical education in India (Dass,1984; p.56). During the First Five Year Plan (1951-1956) some growth was experienced in the technical education. The Indian Institute of Technologies have been planned to serve under graduate courses for 1200 students and post graduate and research courses for 600 students.(F.F.Y.P Report,1951-1956) These institutes were required to impart educational facilities and in the subject such as Naval Architecture and Marine Engineering, Fuel and Combustion Engineering, Production Technology, Mechanical Handling of Materials, Agricultural Engineering, Geophysics, Town and Regional Planning and Architecture etc.(F.F.Y.P Report,1951-1956)

Second Five Year Plan (1956-1961) also paid close attention on Technical and Vocational education. The First Five Year Plan allocated Rs. 169 crores for the development of Indian education, (Rs. 44 Crores for Centre and Rs. 125 for States). In the Second Five Year Plan Rupees 307 crores have been sanctioned for the development the Indian education system, (Rs- 95 crores for centre and 212 corers for states) (S.F.Y.P.Report,1956-1961). In this plan Rupees 48 crores was allocated only for the development of technical education in the country. During Second Five Year Plan Indian Institute of Technology, Kharagpur became self-sufficient to provide facilities for the necessary studies. The Second Five Year Plan was instrumental in bringing changes in technical education which recommended the establishment of private technical institutes. The number of scholarships and facilities were also increased from 633 to 800 in order to motivate the poor students to complete their study and substantial provisions had been made for scholarships for technical education. Additional hostel accommodation were provided and which was increased to about 13000 for technical students and 3300 for junior technical students (S.F.Y.P.Report, 1956-1961).

The Third Five Year Plan allotted Rupees- 560 crores for education and out of this funds Rs.142 crores have been allotted for the schemes of technical education. If as an analysis is done on the allocation of fund in First and Second Five Year Plans. It can be revealed that only 13% and 19% have allotted for technical education in India in the successive plans and about 25 % of the outlay on technical education in the Third Five Year Plans (T.F.Y.P.Report, 1961-1966).

The Second Five Year Plan has made considerable improvement for engineering education. The number of colleges has been increased from 65 to 100, the annual admission also increased from 5890 to 13860. The number of polytechnique institutions which offered diploma courses has risen from 114 to 196 and their annual admission capacity have gone up from 10480 to 25570. In the ground of technical education, it may be said that each plan is essential guiding source for the preparation of the next plan.

The following Table summarises the progress achieved so far and programmes for the Third Five Year Plan (T.F.Y.P.Report, 1961-1966).

**Growth of the Institutions that Offered Degree and Diploma Courses in India and the
Total Number of Students in the Institution**

| Year | Engage in Institutions which offers Degree Courses | Admission Capacity | Actual Seats Filled | Engage in Institution Which Offers Diploma Courses | Admission Capacity | Actual Seats Filled |
|---------|--|--------------------|---------------------|--|--------------------|---------------------|
| 1947-48 | 38 | 2940 | 1270 | 53 | 3670 | 1440 |
| 1950-51 | 49 | 4120 | 2200 | 84 | 5900 | 2480 |
| 1955-56 | 65 | 5890 | 4020 | 114 | 10480 | 4500 |
| 1960-61 | 100 | 13860 | 5700 | 196 | 25570 | 8000 |
| 1965-66 | 117 | 19140 | 12000 | 263 | 37390 | 19000 |
| 1965-66 | 136 | 25000 | 12400 | 312 | 50000 | 17400 |

Central Government of India has authorized The Apprentices Act which was passed in 1961 in order to make interaction with Central Apprenticeship Council (Act of Parliament, 1961; p.438). As per as the guidelines of the Act the voluntary scheme of education known as Programme of Apprenticeship Training was organized by the Ministry of Education, Government of India. The main objectives of this act was arranged to impart practical training facilities to unemployed engineers and diploma holders (Polytechnic) in order to serve to train the people for employment in the industry(Annual Report,1977;p.59)

Technical Education earned its moving momentum with the passing of Five Year Plans and the initiation taken by Ministry of Human Resource Development (MHRD), Government of India. During 1947- 1948. There were thirty eight engineering colleges and fifty three polytechnics in the country. Out of which three engineering colleges and two polytechnics were in West Bengal. After the Third Five Year Plan in (1865-1966), the number of degree colleges were also

increased to 136 and polytechnic to 312 which the state of west Bengal had 12 Degree Colleges and 27 Polytechnics(Debnath,Ph.D.Thesis,1994).

It has been noted that in the early half of the 20th century, Mr. Jamshedi Tata is to realize the significance of scientific, technical education and research programmes. It put emphasis to the young students to train them in the field the technical and scientific education. The target of Mr. Tata was to build up a world class institution which fulfill the process of the development in the country (Subbarayappa, 1992).

During colonial period, Technical education was developed on colonial model and it made progress as per the requirement of the colony. After independence, India got a great momentum and impart changes in the objectives and the fact that the technical education and encouraged that technical education is an essential prerequisite for economic development of the country which helped in the improving the quality of life of the people (Singh, 2009)

Technical Education is a dynamic subject which is constantly changeable in our society from past to present. If an analysis is done of the historical development of technical education, it will be found that the foundation of technical education in India was laid almost at same time as in Europe, but its growth in India was very restricted and slow till India became Independent. From 1947-1948 to 1964 steady growth of degree level courses had taken place in Bengal and also India.(Debnath Ph.D. Unpublished Thesis, 1994) After this no institutions was started till 1992 and negligible growth in the field of technical education have taken place in the country. The development in the field of technical education had an effect the in socio-economic and political development of the country.

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