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Development of Technical Education in India (1902-1947): A Study

Totan Shaikh
Research Scholar (Ph.D.)
Department of History,
Aliah University, Kolkata, West Bengal,

Abstract
Technical Education is one of the core component of human resources development spectrum with high potential for contributing to the national economy and improving the quality of life of the people in the country. Professional Education in general and Technical Education in particular was receiving close attention after the World War I and it got momentum after the World War II with the establishment of All India Council for Technical Education (AICTE), Scientific Manpower Committee (SMC) and Five Year Plans (FYP). The establishment of Technical Education system helped to sub-extent in socio-economic development of the society.

Keywords: AICTE, SMC, Five Year Plan, Nalini Ranjan Sarkar Committee, Shimla Conference.

Introduction

Technical Education is a dynamic subject which is constantly changeable in the society from past to present. In ancient time, India provided a high quality of Science and Technology. Mohenjo-Daro is the proper examples of town planning, civil engineering and architecture in Ancient India. In present, Technical Education in India has developed under the need of various areas including Industrial, Engineering and Technological Training. The Growth of Technical Education depends on the Socio-economic and industrial conditions and its development monitored by the needs and requirements of the society. The development of Technical Education in India during colonial period was two separate levels. One represented by Colleges or Universities and the other represented by Schools. The growth of Technical Education in India before the Independent can be divided into three main phases, (a) 1800-1857, (b) 1857-1902, (c) 1902-1947.[1]

In the present article, an attempt is made to explore the condition and development of Technical Education in India from 1902 to 1947.[2] In 1901, Lord Curzon arranged a meeting in Shimla to discuss the matters which were related to education from Primary to University level, including the Industrial Survey Schools. Near about 156 resolutions in total were taken and many were related to Technical Education in India. He tried to do much to broaden the Technical Education. With the growth of awareness for the needs of Technical Education in India, it provided a platform for the establishment of the institutions such as the Indian Institute of Science, established by Philanthropist Jamshedji Tata in 1909-22. The Technical Education in colonial India

was high priority hoping of British Authority that would facilitate the administration system of colonial India.[3]

During the Swadeshi Movement, many national educational institutions got themselves separated from the control of the Government. Many of these Institutions were engaged to impart Technical Education. The Viceroy, Lord Hardinge (1944-1948) gave attention to the development of Technical Education in India and also provided a respectable weightage. Technical Education mostly is imparted through different kinds of institutions at three different levels in India.

A. Industrial Training Institutes (ITI), which conduct trade courses for skilled workers.

B. Polytechnic Institutes, which conduct Diplomas to produce middle level technicians.

C. Engineering Colleges, which conduct Undergraduate and Postgraduate Degree courses in Engineering and Technology. [4]

From 1902 to 1921, the importance of Technical Education was realized for the development of the society in India. Indian Education Policy (1902) played a crucial role in the quick growth of Technical Education.[5] With the recommendation of Indian Education Commission, the Technical and Vocational Education both were added to the curriculum of high schools in the different provinces of the country.[6]

Some of the Annual Sessions of Indian National Congress discussed the need of the promotion of Technical Education in India. As a result, the College of Engineering and Technology, Jadavpur in Bengal was established by the recommendation of National Council of Education and also offered Diploma in Mechanical and Electrical Engineering courses from 1908 and in Chemical Engineering from 1921. The Degree course in Mechanical and Electrical Engineering were offered for the first time in Banaras Hindu University in the country.[7]

In 1902, the University Commission expressed the modification of the approaches for the development of Technical Education in India. The Governor General announced in 1913 that the policy statement on Technical Education as branches of education at present evokes greater public interest for technical and industrial instraction.[8] As a result, Technical Education got a momentum and spread all across in India. The Engineering Schools, and the Government Polytechnics of Nagpur and Sir J.J. College of Architecture of Bombay etc. were established in 1914 which played a significant role for the further development of Technical Education in India.

Technical Education in colonial India started with the initiation of colonial interest. Abbott and Wood's Report (1937) provided a concrete proposal on Technical Education which also reflects the state and situation of Technical Education in the country.[9] It is the twenty five years' time period between 1919 to 1945 which experienced gradual changes and development in the scenario of Technical Education in India. Two documents provides ample information about the education policy of said period. Several education committees such as Hartog Committee Report (1929) and Sargent Committee Report (1944) recommended number of provisions to improve the conditions of Technical Education in India.[10]

The following Table provides information about the different kind of Technical Institutions that were present in 1927

Kinds of Institutions	Number in 1927
1.University Department of Engineering	3
2.Engineering Colleges	4
3.Engineering Schools	10

The following Table provides information about the development of Technical Education in school level from 1917-1927

Provinces		No.of Technical and Industrial Schools		
		1917	1922	1927
1.	Madras	40	41	63
2.	Bombay	26	31	33
3.	Bengal	59	86	153
4.	United Provinces	28	37	111
5.	Punjab	33	25	24
6	Burma	4	3	2
7.	Bihar & Orissa	38	32	43
8.	Central Provinces	9	7	2
9.	Assam	7	12	15
Total Technical and Industrial Schools of the British India		251	276	450

The above table provides information about the development of Technical Education in India. It is revealed from the table that Bengal experienced steady progress in the field of Technical Education in school level curriculum. It is very important to note that, the acceptance of Technical Education in the society depended on the economic and social conditions of the students. It also depends on the psychographic conditions of the students.

Education of Engineering and Technology gathered momentum with the establishment of the Banaras Engineering College (BENCO) which was established by the Pt. Madan Mohan Malviya in 1919, The College of Mining and Metallurgy (MINMET) and the College of Technology (TECHNO) respectively in 1919, 1923, and 1932. These three Engineering Institutions were amalgamated to form the Institutes of Technology (IT-BHU) in 1968.[11] from 1921 to 1937, a number of Technical Schools were founded for the promotion of Technical Education in the country. These schools were the Indian School of Mines, Dhanbad; The Harcourt Technological Institute, Kanpur; and the School of Chemical Technology, Bombay.[12]

During the First World War, no consequent growth was experienced in the Technical Education in India. At the conclusion of World War I, a huge amount of experienced technicians were needed. Technical Education moved at a slow pace up to 1919.Later on it got a momentum. As a result, five Technical Institutions for higher learning in University level were established. It increased to twenty one in 1939. At the time of World War II, India became Independent, Government of India paid close attention to steady growth of Technical Education in India.

Diploma Schools were also increased from eight to twenty three. Some of the important Institutions were also established in between two World Wars to fill the

requirement of our society. Several Institutions were also established such as Harcourt Butler Technologies Institute, Kanpur (1920),Indian School of Mines,Dhanbad (1926), University Department of Chemical Technology, Mumbai (1934), Engineering College in Aligarh Muslims University (1935), Delhi Polytechnic (1941) Laxminarayan Institute of Technology, Nagpur (1943),Alagappa Chettiar College of Technology, Guindy (1944), Department of Engineering in Annamalai University (1945) and three other Colleges in Madras Province in Coimbatore (1945), Kakinada and Anantapur (1946) etc. The said period experienced the growth of enrollment for Technical Education from 0.126 million (1936-37) to 0.201 million.[13]

From 1931 to 1940, number of colleges such as Bengal Engineering College, Sibpur, Guinday and Poona were established for further promotion in the studies of the important subjects like Mechanical, Electrical and Metallurgy. In 1939, the World War broke out which created a crisis in the field of Technical Education. This was the turning point of the history of the Technical Education in India. There were not more than ten or eleven Engineering Colleges in India each with one annual intake capacity of about 200.[14] Both Abbot (Former Chief Inspector of Technical Schools, Board of Education, England) and S.H.Wood (Director of Intelligence, Board of Education, England) realized and identified the problems of vocational and Technical Education. On the recommendations, a new type of Technical Institution (Polytechnique) came out for training of middle level technical personnels.[15]Delhi Polytechnique (1941) which was converted into Engineering College was the first Polytechnics Institution in India.[16]

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)[17] November 30, 1945 and also with 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, 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. It was stressed on the utilization of human resources for industrialization as it required for education in science and training. [18]

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.[19]

Conclusion:

Technical Education is a very dynamic subject which experienced changes from time to time. During colonial India, several Institutes, Engineering and Polytechnics Colleges were established which imparted standard objects oriented engineering study programmes. It provided opportunities to the students who were ready to accept their Degrees and Diplomas in Engineering and Polytechnics courses. Most of the

Technical Educational Institutions which were established during colonial period was to further colonial interest. During 1930s, a large number of institutions were established which attracted students from different sections of the society. These institutions offered object oriented engineering study programme which benefited the students to avail the job opportunities and also to know strengths and weaknesses and many occasion realize the responsibilities and fulfill the individual ambitions and aspirations. It helped to create the platform for the socio-economic development of an individual and the groups of individual or for the particular society.

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