TECHNICAL EDUCATION IN NORTH-EAST INDIA

Sunanda Datta

About the Book

Techincal education reflects the state of industrialisation of a country and is itself shaped by it. As Technical Education can be seen as a tool for bringing about material prosperity and development of human resources, it has immense significance for North East India with its vast natural resources. Is this aspiration being achieved ? The book offers a critical examination of the pattern of Technical Education in the socio-economic context of North-East India and proposes several suggestions for its innovation.

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About the Author

Dr. Sunanda Datta taught Applied Linguistics, Socio linguistics, Language Learning and Teaching and Literature in the Department of English at Manipur University, Imphal, where she held the post of Professor till her retirement in 1997. She has also taught in Calcutta, and in the Universities of Burdwan and Dibrugarh.

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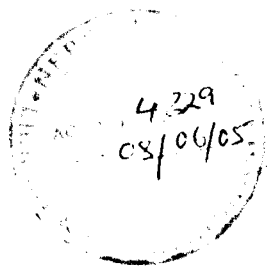

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Introduction

The technical education of a country looks in two directions. On the one hand it reflects the state of technical capability or the degree of industrialisation available in the country. On the other hand it reflects the direction which a country or a nation wishes to follow for its future economie and material welfare. As a developing country, India as a whole is caught just in the position where it "looks before and after, and pines for what is not". Within India, the North-East region as a gegoraphical unit, displays certain common social, economic and political features. How these relate to the concept of technical education and what impact technical education is likely to have on the region and its people are areas which have not always been studied in depth.

The present book makes an attempt to define technical education in the Indian context, consider how technical education has evolved with changes in society and what demands it makes on its learners in particular and on society as a whole.

India has the distinction of possessing one of the largest pools of scientific and technical personnel in the world. However, India is not considered to be a very highly industrialised country. There seems to be an anomaly here. Such an anomaly may have several causes and may be the outcome of a faulty system of technical education. Other causes may be disparate development, disparate distribution of resources and facilities, inappropriate planning, non-relevant technology and the like.

Another aspect which needs to be taken into account is the amount of fit between technical education and the social fabric. Like the Indian education system as a whole, technical education in India has not been an indigenous growth, geared to the needs and aspirations of the people of India, but has been imported from the West to cater to the material needs of the rulers and their empire-building activities. This means that along with the content of technical education, attendant beliefs and

attitudes have also been brought over.

When a particular society develops a system, that system is attuned to the values and the particular needs of that society. If the system is transplanted , that attunement need not necessarily get transferred. In such a case mutual sustenance between the system and the receiving society may not develop at all. If such is the case, the system remains weak and needs regeneration from time to time. The analogy is that of a potted plant as compared to a plant growing in the soil. It is within the bounds of possibility that technical education in India is of such a nature and that may be the reason why with the third largest body of technical personnel in the world, India is still one among the under industrialised nations.

The further point that needs to be made is that the kind of machine - intensive heavy industries model imported from the West may not be the appropriate one for a country like India which is basically agricultural and which is immensely rich in human and natural resources.

Moreover, it is becoming increasingly clear that traditional industries play havoc with the environment and deplete natural resources beyond repair. In addition, such industries are not at all environment-friendly and pollute air, water and soil, causing diseases of various kinds and weakening the human potential. Hence there is a pressing need for evolving a kind of technical education which takes into account the emerging concerns of society. In other words, technical education needs to be flexible, sensitive to the changes taking place in society and amenable to the value bases of society. It has to be able to sustain itself and sustain the society in which it operates. The needs of the society will shape its nature and it will in turn regulate the society in a number of ways.

Further, technical education is usually seen as an instrument of development and change. However, the concept of "development" is a changing one and is indeed being redefined during the nineties. Development does not necessarily mean a high GNP, good roads, concrete houses, possession of T.V. and cars, or a life-style using/wasting large amounts of natural resources. Recently the concept of development has been redefined as "sustainable economic development" in the face of an imminent environmental and social catastrophe. Thus it has become imperative to re-orient the present life style and attitude to the use of the natural resources base. This means that within differing contexts development

will manifest itself in differing ways, and no single model will be appropriate for all contexts. As Ghosh (1996) has pointed out,

> "`Sustainable economic development' in the wider connotation, indicates the socio-economic and cultural developmental path for both industrialised and developing countries. It is to be conceived meaningfully as a problem for the human civilisation on the aggregative level, for the present generation as well as in the intergenerational context."
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> **(Ghosh 1996 : 49)**

The cultural and social aspects of technical education thus assume a great significance. In fact, international funding agencies are becoming increasingly aware of the fact that development projects work best when these fit in with the life style of the receiving group and are sustained by them. For instance, the current trend of rising population in India, with a given level of technology, generates immense pressure on its natural resource base and available economic opportunities. The existing level of resources will have to be spread very thin unless alternative strategies for either genrating more resources or finding alternative ones are formulated. This calls for a drastically different policy formulation rather than strengthening the existing ones. This need not be the case in relation to developed countries where population growth is either zero or even negative. The type of technology favoured by such countries is likely to be machine/automation oriented rather than labour intensive. In a country like India on the other hand, abundance of labour demands a type of technology which can utilise human labour to the fullest extent. This would suggest cottage industry and small scale industries rather than heavy industries being the appropriate modes of technology for India.

In order to put into perspective the ways in which technical education operates in India at present, we need to consider the origin and history of technical and vocational education in India. Since technical education studies consist of the applied aspects of the findings of science, the history of technical and vocational education cannot be separated from that of science education. The following account of science education in India will attempt to bring out the factors which influenced the decision-making processes. In the account that follows, we will be

looking at the historical changes in the goals of science education in India and the consequences of these changes on the curriculum and instruction in technical education.

Historical changes in the goals and programmes of science education raises several fundamental questions. Some of these are : How does science education change ? What, in fact, changes in science education ? When does science education change ? Why does science education change ? Moreover, in order to be seen in its proper perspective, science education must be considered within the total context of general education. The basic question that can be formulated is : Are there identifiable goals which have continually been a part of science education ?If these goals do exist, then there is the further question, do variations in the goals result in different models of science curriculum and instruction ? There is the further hypothesis that the aims and models would have changed in different directions due to varying social forces and that these changes would be recognizable upon analysis. In general then, the organization of curriculum and instruction in science education is influenced by three major goals : the *knowledge* of science, the *methods* of science and the *development* of the individual. First, there is the modification or updating of the goals, since in science knowledge is always expanding and existing theories undergoing changes in the light of new knowledge. Secondly, there is a short-term reorganization in the order of priority given to the individual goals. Is it knowledge, for example, or is it the method of science, which should have priority ? Third, goals ascend or descend in organizational prominence over a longer period of time. Such changes are related to social forces which operate at a particular point of time within a particular society. Further, the goals are modified from within science education while the organization and context of the specifc aims in models of curriculum and instruction are largely influenced by societal and scientific changes. Goals of science education and societal changes thus form the two bases of a curriculum related to science education, as set out in Fig. 1.1.

Science education, in its turn, is influenced by the discoveries of science, and the state of knowledge in science at any given point of time. On the other hand, societal changes are related to the economic development, cultural traditions and the relationships between a particular society and technological changes. The last takes into account how technologically oriented a particular society is. These factors are set out in a diagrammatical form in Fig. 1.2.

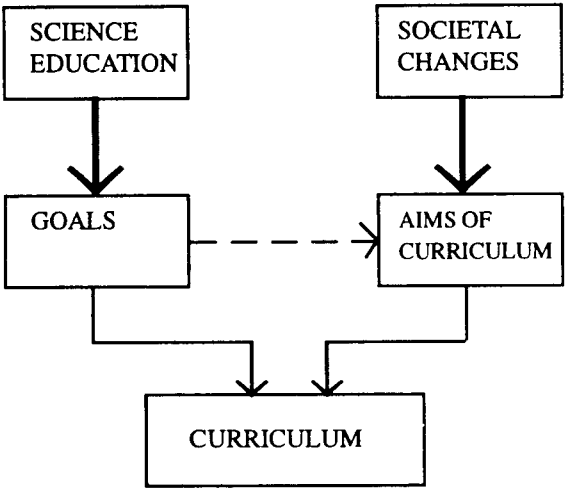

Fig.1.1 Bases of the curriculum : First approximation

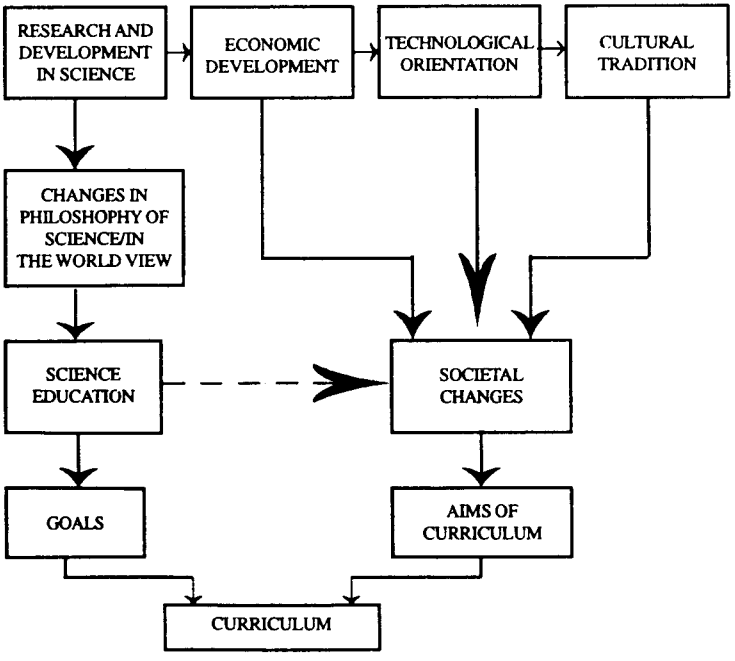

Fig. 1.2. Bases of the curriculum : Second approximation

It thus becomes eminently clear that technical education does not operate in a social vacuum. The goals of technical education are determined by the social and cultural norms of the society in which it operates. Further, the needs are generated by the nature of that society itself. Thus technical education cannot have the same manifestation in all contexts. It must possess the modalities for determining from time to time, what is appropriate, relevant and viable within a particular socio-cultural and economic set up. Only then can technical education be vibrant and dynamic in nature and can fulfil the aspirations of the society in which it operates. The crucial question thus is : does technical education in India possess this quality ? It is hoped that an answer will emerge subsequently.