1. NATURE AND SCOPE OF THE STUDY

1.1 IMPORTANCE OF TECHNICAL MANPOWER PLANNING

The wealth and prosperity of a nation depends largely upon the effective utilization of its MANPOWER through industrial and agricultural production. The use of manpower for industrialization demands its education and knowledge in Science and Technology. India's enormous resources of manpower can only become an asset in the modern world when trained and educated. It is said that "technical education is a learning profession rather than a learned profession." It is a subject of the society. It has to respond to the needs and aspirations of the society in discharging its duties of training technical manpower.

Thus it is the urgent need of the age to do the manpower planning of technocrats in order to avoid irreparable waste. "Manpower planning is the application of planning process in order to assess the requirements of manpower and also for procuring, utilizing and developing the human resources at the level of enterprise in order to attain the objectives of the organization." 2 Behind the success and failure of an organization the need for having the right number of personnel of relevant categories and of utilizing them properly assumes special significance.

1.2. TECHNICAL EDUCATION AND TECHNOCRATS

In today's high velocity environment, 'technocrats' are a matter of great importance to any nation. They are the prime movers in determining the future of the society and function like insurance against obsolescence. Today's technocrats have to be more innovative, imaginative, creative and of world class standards. The frontiers of Science and Technology are widening and doubling by leaps and bounds everyday. In order to become more relevant and meaningful in a world, where there is a technological upheaval one has to update oneself in his/her field of study or else we become stagnant and obsolete in this scientific era. There is an old

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2. Bartholomew D. J., Manpower Planning
saying that "one who has graduated yesterday but has stopped learning today will become uneducated tomorrow." The message is not only clear but also emphatic in highlighting the need of continuous education for mitigating the danger of knowledge obsolescence.

Digesting technology requires talented people. It is a bitter truth that Government has failed to realize that raw material of technology is not capital, not labour, not machines, not imports but Talented People. In this connection best to quote Donald Christiansen (IEEE Press at New York in 1987) - "A country that trains its engineers and technologists well, then reward them with both real and psychic income should have little trouble in competing in a world economy that thrives on trading high quality, high tech products over international boundaries." 63

1.3 HISTORY OF TECHNICAL EDUCATION

In 1947, there were only 38 institutions at the degree level and 53 institutions at the diploma level with an annual intake of 2940 and 3670 students respectively. In 1980, there are over 362 institutions at the degree level and about 966 institutions at the diploma level with an annual intake of 7992 and 129309 students respectively. We have come a long way since independence. There has been a significant quantitative growth in technical education, but has not been matched by a corresponding generation of employment potential. Unfortunately there is a tremendous inertia toward change in our country, with a sizable population having no education and hence ill-equipped to adopt to change. Thus in order to stand in the global market, we must become rapidly competitive through improvements in technology, management, labour productivity and quality of technical education.

It is necessary to correct existing imbalances in generation of technical manpower with following steps

1. Manpower assessment should be done for various regions on short term and long term basis.

2. Accreditation process should commence to uplift the quality of technical institutions with incentives and penalties.

3. The optimum size of students enrollment should be determined for each program and institution to avoid wastages in institutional infrastructure costs.

4. We must endeavor to employ infrastructural facilities at the optimum level, particularly the cost exorbitant institutional buildings by adding on shifts or short duration compressed modules of courses. This would facilitate the spread of advanced technology without additional expenditures.

1.4 THE PROBLEM UNDER STUDY

Maharashtra is a large state with multifarious and diverse activities of the people ranging from strong agricultural base to sophisticated industrial culture. Industrial development being one of the prime needs of our country, a great deal of stress has been laid on the development of Technical Education in the various plans of the country. Maharashtra has an important place in the industrialization of the country.

The development and sustenance of industry is entirely dependent upon the availability of trained manpower to perform multifarious activities needed to keep the wheels of the industry running. A heavy responsibility is therefore, cast on the state to provide and make available trained and technically qualified hands required by the industry, trade and commerce including agriculture based industries. Subsequently Government of Maharashtra State has placed greater emphasis on the development of Scientific and Technical Education.

The Maharashtra State has a long chequered history in the planned and systematic development of the Technical Education at all levels. It has been in the forefront in providing and making available the required skilled trained persons and facilities accessible to all levels of Technical Education. With the advent of independence of the country

* PEOPLE do not lack strength, they lack will
- Victor Hugo

(1.3)
which brought in it's wake a complete revolution in industrial sector in the country giving rise to the increasing demands of consequence of the training facilities and number of institutions at all levels of technical and vocational education is increasing. Simultaneously there is a corresponding increase in manpower needs, in industrial sector. This process is still in progress and a number of institutions are coming up every year.

In the contemporary scenario, it has been observed that, the population of manpower in various disciplines is not based upon an accurate assessment of manpower demand in various sectors of the economy. As a result, there is a mass production in many areas where as there is an acute shortage of manpower in many new and emerging areas like Computer Technology, Optical Fiber, Robotics, Bio-Technology, Space Research etc. about one lakh of technical diploma holders and over 50000 technical degree holders are reported to be unemployed and underemployed. Therefore in these fields there is an urgent need for research and study. Hence the topic has been choosen for the study is "Manpower Planning of Technocrats in the Perspective of Technical Education in Maharashtra State."

1.5 OBJECTIVES OF THE STUDY

A research work can have fruitful direction if the objectives are crystal clear and streamlined. The objectives of the study decide it's scope and limitations as well. The major objectives of the study are enlisted as follows-

1. To study existing Technical Education Policy.
2. To study Limitations of existing Technical Educational policy
3. To define long-term planning for proper Technical Educational Policy.
4. To suggest guidelines so that policy become broadbase.

* An expert is one who knows more and more about less and less.
1.6 HYPOTHESIS

The assumptions and postulates taken as basis for starting an research inquiry decide its line of action and probable findings. It helped to understand, what is the nature of the inquiry and what the researcher intends to find out. The major hypothesis accepted for the purpose of this study are:

1. Technical manpower is the basis of national economic development and there exists a need to streamline and restructure the technical education policy.
2. The quality of the technical education needs to be upgraded in the light of changing technical and economic scenario of the country.
3. The technical education in the state has to planned in considering the existing manpower, future needs and existing trends and development.

1.7 METHODOLOGY

The methodology employed for this study was as follows:

Collection of factual data from Director of Technical Education, Maharashtra State. National Technical Manpower Information system (NTMIS), Nodal Center, Mumbai, Institute of Applied Manpower Research, New Delhi. The factual data shall be as follows:

a. Number of Technical institutions imparting Technical Education.
b. Number of Technical graduates getting job.
c. Number of unemployed graduates of Technical Education.
d. The graduates graduating from a particular branch get employment pertaining to that branch or whether they get job concerning to their managerial or other skill.

* Watch for big problems. They disguise big opportunities.

- Jackson Brown Jr.
The research design is presented in the following diagram.

Fig. 1.1: RESEARCH DESIGN

1. THE PROBLEM FORMULATION
2. DEFINING RESEARCH OBJECTIVES
3. ESTABLISHING HYPOTHESIS
4. CHOICE OF RESEARCH METHODS
5. SELECTION OF DATA SOURCES
6. ANALYSIS OF DATA
7. INTERPRETATION
8. CONCLUSIONS & SUGGESTIONS

* One Man with courage makes a majority.
  - Andrew Jackson
CHAPTER 1: Nature and Scope of the Study

This chapter details out the nature, scope, objective as well as methodology of the study. It also indicates the hypothesis laid down for the purpose of the study.

CHAPTER 2: Technology And Manpower Planning - A Conceptual Analysis

This chapter emphasizes on the various aspects of the manpower planning. Right from the definition of the manpower planning, its need, use, future advancement, its impact on past, present as well as future technology. It also explains the need of estimating the organization of this manpower planning, highlights the impact of manpower planning on our present life and the drastic changes occurring at the industrial and thus at national level. Finally it deals with role of manpower planning in present economy followed by the technical manpower in economic development, which is the architect of any country.

CHAPTER 3: A Brief History of Development of Technical Education in India

This chapter comprises of various Commissions and Reports which were frame in the years viz - Overview of Macdonnel education commission 1886, Sir E.C. Buck commission 1901, Simla education conference 1901, Indian industrial commission report 1916-18, Mr Abbott and Wood report 1936-38, Wardha scheme 1937, Appointment of Scientific manpower committee. Other related topic included are - Structure of technical education, Role of institution of engineers. History of technical education in the Maharashtra state giving a detailed outline on the V.I.T.I. : A Primer institute in India, J.J. College of Architecture : Bombay, Sir Vishveshariya committee report 1921-22, Report of the Atkinson Donson committee 1992 which gives necessity for practical training, Need for expansion of technical education, technical education after independence, independent directorate, responsibilities of engineering academic institutions and evolution of national policies and

* The harder you work, the luckier you get.
their implementation, role of various agencies in the development of technical education.

CHAPTER 4: *Industrial Scenario of Maharashtra*

It covers a brief overview of industries in Maharashtra State with reference to various divisions based on types of production, salient features, important characteristics of industrial sector and an impact of new industrial policy on technical Manpower.

CHAPTER 5: *Analysis and Interpretation of data*

The analysis of the data covers following major aspects related with Technical Education, Manpower Planning and Labour Market. a) Status, scope and development of technical education in the state of Maharashtra b) Development of Labour Market for technical graduate and present labour market scenario c) Impact of various technical educational and employment policies on labour market.

CHAPTER 6: *Conclusions and Suggestions*

The conclusions cover various aspects of the study such as conclusions on growth and prospects of technical courses, continuing education for engineering manpower, employment potential for technocrats, labour market conditions finally it ends with manpower planning of technical graduates in the economy.

The various suggestions put forth in the thesis are - Firstly improvement of quality and standards of technical education, which throw light on imparting quality education, purpose for quality assessment, definition of quality, critical factors of quality in technical institutions, standards as a measure of technical education, accreditation as process of quality assurance, methods of assessing quality and standards, total quality management in technical institutions, features of Total Quality Management (TQM) in technical institutions and steps for total quality management.

* IMAGINATION is the highest kite that one can fly. - Lauren Bacall
Second suggestions regarding fault in the existing manpower policy. Third suggestion to improve labour market position. Next one is regarding improvement of labour market positions. Finally there is a suggestion dealing with Industry Institute Interaction (III), which covers concept of III, dimensions of III. Proposed action plan for effective III, III - Today and Tomorrow and small enterprises productivity improvement through industry institute partnership approach.

1.9 LIMITATIONS OF THE STUDY

The present study has the following limitations

1. The study is based on statistics that had been collected from secondary sources such as reports, statistical information and surveys undertaken by the apex institutions in the country like Institute of Applied Manpower Research, New Delhi, National Technical Manpower Information System, Nodal Center, Mumbai and Director of Technical Education, Maharashtra State, Mumbai etc.

2. In this study researchers had not used a tool of first hand inquiry like questionnaire because of the nature of research is such that the data required can be easily collected by using secondary survey of information.

3. Certain statistics collected by the researcher has limitations of time span and updatedness. This is mainly because of the apex institutions are not publishing their annual statistics report. However, the researcher had been tried to collect the latest of statistics and wherever possible it has been updated.

* Victory belongs to only the most persevering.

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