Chapter 1

Introduction
INTRODUCTION

Human resource development has come to acquire great significance in the contemporary world. It is generally recognized that improvement in manpower quality, a crucial element in economic growth, can be achieved through investment in education and training. A relatively new branch of study, namely, economics of education, has emerged, which, along with health economics forms the core of the economics of human resources. In his presidential address at the American Economic Association in 1960, T.W. Schultz brought into focus the concept of human capital. Subsequently human capital acquired a status, equal to, if not more, than physical capital and education plays the most important role in developing human capital at every stage of the development process. Education is an important and basic input required to improve the quality of human resources.

Education supplies the economy with human resources, with the requisite knowledge, training and qualification to meet the demand for economic development. An increased proportion of government expenditure on education is advocated to achieve a higher rate of economic growth. High levels of education lead to a greater awareness and also contribute to improvement of economic conditions. It acts as a catalyst for social upliftment enhancing the returns on investment made in almost every aspect of development effort, whether it is population control, health, or empowerment of women and weaker sections of society.

Undeveloped human resources are manifest in low labour productivity, factor immobility, limited specialization in occupations etc that minimize the incentives for economic development. Less developed countries have dearth of critical skills and
knowledge. Physical capital whether indigenous or imported cannot be productively utilized if labour is not well versed with modern technology. Education develops basic skills and abilities and boosts productivity and is essential for economic development of a country. It should be regarded as an investment instead of being treated as mere consumption, an approach that is now gaining currency.

Economic development is a process involving physical growth of per capita output in the economy, that is, economic growth on one hand, and on the other, availability of a variety and better quality of that output. It is a process whereby the real per capita income of a country increases over a long period of time and is accompanied by increase in welfare across all groups of people. The increase in the quality of human beings by way of education, healthcare, nutrition, etc. helps to increase the physical output. Therefore, human resource development along with physical capital formation plays a useful role in economic development. The human resources can be developed by providing formal education from elementary to higher level, technical and professional, on the job training, adult education programmes, and correspondence or distance education. Apart from better education and health and better living conditions also improve human resources. But education is of greater significance as it can easily be quantified and is amenable to measurement and change more than others.

1.1. THE IMPORTANCE OF EDUCATION IN ECONOMIC DEVELOPMENT

Before twentieth century, in any country, the systematic investment in human capital was not considered as important. Expenditures on schooling, on-the-job training, and other related forms of investment were rather small. This began to change completely
during this century with application of science to the development of new goods and more efficient methods of production, first in Great Britain, and then gradually in other countries.

Education, skills and the gaining of knowledge have become vital determinants of a person’s as well as that of a nation’s productivity, during the twentieth century as mentioned by Ilhan OZTURK (2001) “One can even call the twentieth century the “Age of Human Capital” in the sense that the primary determinant of a country’s standard of living is how well it succeeds in developing and utilizing the skills and knowledge, and furthering the health and educating the majority of its population.”

Throughout the developing world, the past decades have seen unusual expansion in access to basic education. Many countries are now on the edge of a further enhancement in access to secondary and higher education and in effecting stunning improvements in the quality of education offered at all levels. As increasing numbers of students complete their basic education, their demand for education at higher levels increases. Educating girls and women is possibly the single most effective investment a developing country can make, whether or not women work outside the home. It creates a massive amount of positive remunerations for families together with better family health and nutrition, improved birth spacing, lower infant and child mortality, and improved educational attainment of children. Developing countries in the Middle East and elsewhere are increasingly incorporated in world markets for manufactured goods. Their capability to race in these markets and in globalizing service markets will depend on the excellence of human capital they bring to the competition. Ensuring that all citizens are educated and numerate, that many acquire a wide range of problem solving skills beyond the basic level, and that some have world class
professional skills will necessitate new curricula, improved teacher programs, and academic methods that encourage higher order cognitive skills.

Without significant investment in human capital, no country has achieved constant economic development. Earlier studies have shown attractive returns to a range of human capital accumulation: basic education, research, training, learning-by-doing and aptitude building.

1.2 EDUCATION AND PRODUCTIVITY

Undoubtedly the educational provisions within any given country signify one of the main determinants of the composition and growth of that country’s output and exports and form an important component in a system’s ability to make use of foreign technology efficiently. For example: primary education builds up the base and lays the foundation for future educational development, secondary education all increase the productivity of workers, rural and urban; secondary and along with vocational, facilitates the achievement of skills and managerial capacity; tertiary education supports the development of basic science, the suitable selection of technology imports and the domestic adaptation and development of key institutions, of government, the law, and the financial system, among others, all necessary for economic growth.

In agriculture, evidence suggests positive effects of education on productivity among farmers using modern technologies, but less impact, as might be estimated, among those using traditional methods. Birdsall (1993) studied that, “in Thailand, farmers with four or more years of schooling were three times more likely to adopt fertilizer and other modern inputs than less educated farmers”. Similarly, Jamison and Moock
(1994) studied that, “in Nepal, the completion of at least seven years of schooling increased productivity in wheat by over a quarter, and in rice by 13%”.

Education alone, of course cannot alter an economy. The quantity and quality of investment, domestic and foreign, jointly with the overall policy environment, form the other significant determinants of economic performance. However the level of human development has a significant bearing on these factors too. The quality of policy making and of investment decisions is bound to be influenced by the education of both policy makers and managers; also, the volume of both domestic and foreign investment is likely to be larger when a system’s human capital supply is extra abundant.

1.3. ECONOMIC DEVELOPMENT AND HIGHER EDUCATION

The concept of “development” is used openly as well, as is increasingly being done in mainstream literature and development projects. Development is not confined to macroeconomic forces of growth alone, but also focuses on the improvement of the individual and collective human condition, increasing choices and participation, equality, standards of living and well being, the environment and sustainability. Development is not a stage to be attained or a goal to aim for. Rather, it is a constant process of improvement in which education, research and service play a prominent role in creating a positive change in the self, the institutions and structures that support us. Higher education empowers and raises the quality of life where people can continue to develop their knowledge and skills.

Education and development are interrelated with each other. It is observed that education leads to development and development in turn creates the motivation for
more education. Education prepares and trains skilled workers at all levels to manage capital, technology, services and administration in every sector of the economy. Education can help the society to overcome its ills and problems as it influences different aspects of human behavior.

Higher education creates a more skilled labour force, which produces a shift from low-paid, unskilled and below poverty employment levels, to better paid skilled and above-poverty levels of employment. This shift produces higher labour incomes, a reduction in skill differentials, and an increase in the share of wages in total output. The increase in the number of more educated and skilled people increases the ratio of such people and decreases the ratio of less educated people in the total labour force. Thus, expansion of education influences not only the wages of those who receive better education, but also of those who do not have education or have less education.

Higher education opens up better socio-economic opportunities for weaker sections of the society, reduces poverty and improves income distribution.

The human capital theory given by T.W. Schultz laid a strong foundation for treating education as an investment in human beings and for treating it as an important source of economic growth. It is now widely accepted that investment in human capital is one of the important factors of economic growth and development. Apart from direct expenditures on education, earnings foregone by mature students, on the job training acquired by workers as well as use of leisure time to improve skills are all investment in human capital which enhances productivity and “accounts for most of the impressive rise in the real earnings per workers”. Spillover effects of universities in education are much more far reaching than that of others. A change in attitudes and
outlook towards work and progress is discernible and creates the environment for
development. The positive influence of education can thus be summarized:

(1) Education increases the productivity of a person in labour market and in turn
increases the earnings of the person.

(2) Educated people make more informed choices in their consumption patterns.

(3) Educated people search better employment for themselves.

(4) Educated people are more aware about health, nutrition etc.

(5) Education reduces growth of population, which is a positive aspect of
development in developing countries.

(6) Educated people are more broad-minded and are open to new ideas, new
methods and new techniques all of which are essential to the development
process.

The economic development of developed nations confirms the importance of non-
material investment and also establishes that economic development depends vitally
on the creation of educated labour force which is equipped with necessary technical
skills for modern industrial production and ready to accept and promote economic
development and technical change.

For the economic development of a country material capital as well as human capital
is essential. Human capital is a concept that includes investment made in man through
various means such as education and health. Education affects productivity and
growth through several channels.
1.4  CHANGING ROLE OF HIGHER EDUCATION

The role of higher education is changing over time because objectives and functions of higher education are under quick transformation. It is supposed that the best method higher education can provide the purpose of development of society is to train people through diversified courses capable of tackling the rising problems that beset them. Nowadays, on the one hand these problems are moral and ethical, and materialistic on the other hand, which are related to basic requirements of life, such as food and nutrition, health and sanitation, housing and shelter. These basic requirements can only be fulfilled through economic activity and the higher education system is harnessed to provide the essential skills and expertise along with healthy moral values to run the system in order that these basic needs may be supplied. In a stagnant and subsistence economy the role of higher education may be limited only to mind and character but in a modern system: an information based industrial and commercial economy, higher education has to take care of many necessities of development and sustainability.

Thus, in the present condition higher education cannot justify its existence by providing only higher academic learning for mental or spiritual development, it has to express the required skills for economic development in order that natural resources are explored and exploited and their inefficient use is checked, goods produced, stored and distributed efficiently, services managed well for the well being of people at large and resources preserved for future generation.

Surely, generation of such skills would not only enable solutions to be found to present problems but also prepare the recipients of higher education tackle successfully the difficult and dynamic problems of the future.
Thus, the relationship between higher education and development is complex. These viewpoints stand out in this regard:

(1) That education provides people with the skills to grow and deal with the economy and related services and therefore, investment in education is an investment in human capital.

(2) That higher education provides not only skills for performing vocational tasks, but also promotes social values by encouraging upward mobility in the society, and thus acts as a screening device to select the most competent and ablest people for the best social roles in jobs.

Thus, on the whole we find that higher education is the main tool for development and transformation. Universities can and should exercise a great influence on societal transformation and industrial development. Their output should reflect the quality of human resource development programmes. Without human resource development no society can be made well-off and sustainable, which in turn depends largely on the strength of higher education. Again the level of economic development of a country depends on an adequate and advanced involvement of technology. Universities have to come up to meet this challenge.

The benefits that both industry and university can obtain from industry-institution dealings are fairly well known and well documented. It is recommended that for connecting higher education with development, India’s industries, including public undertakings, should adopt some educational institutions as their own R & D house, which will provide the research pursuits of our education system rewarding. A start
has already been made in this direction, by some industrial houses. It needs to be made more widespread.

At the same time, higher education is required to be more flexible in nature, more general in content, to be adjustable to changing skills requirements to prepare “educable” (adaptable) rather than educated citizens, to deal with ever dynamic technological developments. Higher education needs to be diversified in delivery method, which will take advantage of developments in the labour market.

In the modern world, higher education and industry are inextricably interwoven and the industrial sector utilizes the output of higher educational institutions - the graduates, post graduates and the research findings. It is expected on its part that it will give essential feedback and resources for modernization and development of higher education programmes.

Education and industry, which has become sine qua non for development in the globalised economy, are thus interdependent for supply of inputs that contribute to their productivity and performance. Since competitiveness of industry is determined by factors like utilization of new knowledge and technology, the programmes of higher and specialized educational institutions are viewed from commercial and profit angles by industry and business. Therefore, a strong justification for industry to effectively contribute to education as well, as the latter does to the former.

Due to insufficient investments in education, human competence level, howsoever calculated, is lower for India as compared to its competitors. Therefore, in order to encourage development, strong education industry linkages are important, such that they mutually benefit from each other and reinforce the development of each other.
1.5. APPROACHES TO EDUCATION AND ECONOMIC DEVELOPMENT

It is clear that education and economic development are positively co-related. Various studies have attempted to analyze the contribution of education to economic growth. The following approaches to study this contribution of education are worth considering for making any evaluation of the same:

(1) Simple Correlation Approach

(2) Residual Approach

(3) Returns to Education Approach

1.5.1. Simple Correlation Approach

Simple correlation approach can be used to correlate education with some index of the level of economic activity. For example, we can correlate the level of literacy and per-capita incomes of different countries. High levels of literacy help in achieving a high rate of growth. A literate workforce has a better impact on growth than an illiterate one. Likewise, percentage of GNP spent on education may be compared to per-capita GNP or level of education to per-capita income. Enrolment ratios are another relevant index and in fact have been made use of in calculation of the Human Development Index which is considered an important composite index of development.

The literacy levels of 83 countries were compared with their GNP per-capita by Anderson and Bowman in 1950. They came to the conclusion that there is a threshold level of literacy below which no country can achieve growth. The countries were classified into three: poor, rich and middle level and their literacy levels were compared with per-capita incomes. There were 31 poor countries whose literacy
levels were below 40% and GNP per-capita (in $) was under 300. The literacy level of 24 rich countries was above 70% and their GNP per-capita (in $) was above 700. Similarly, 27 middle level countries had 40% to 69% literacy level, but their GNP per-capita (in $) was not definite and therefore the relation was indeterminate, 40% literacy level was, however, considered to be the threshold level below which development was not possible. VKRV Rao in his socio-economic survey of Delhi brings out a positive correlation between education and earnings. Another study on Bombay by Panchmukhi clearly brings out that people with formal education earned much more than those who had no formal education. And those who had higher level of education had higher earnings. This is shown in table 1.1

**Table 1.1: Level of Education and Annual Income**

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Income (in Rs) before Tax (1970-71)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No formal Education</td>
<td>2900</td>
</tr>
<tr>
<td>Up to Primary Education</td>
<td>3100</td>
</tr>
<tr>
<td>Up to Secondary Education</td>
<td>3500</td>
</tr>
<tr>
<td>Up to Higher Secondary</td>
<td>5500</td>
</tr>
<tr>
<td>Graduates and Above</td>
<td>8200</td>
</tr>
</tbody>
</table>


Table 1.1 clearly brings out the positive correlation between level of education and income (earnings) of workers. As the level of education increases the earnings of workers also increase.
1.5.2. Residual Approach

Various studies conducted in USA showed that without a corresponding increase in the inputs in terms of labour and capital there was an increase in output that had taken place over a period of time. E.F. Denison termed the causative factor of this increase in output as “residual factor” which he identified as education and advances in technology. For calculating the value of the residual factor for the period of 1927 to 1957 for USA he used the Cobb Douglas production function. According to him the average growth rate during the period was because of advancement in knowledge and not because of contribution of the factors of production such as land, labour and capital. The average growth rate worked out to be 2.9% and the value of the residue was little more than 2%. This formed the basis of this approach, and subsequently there was a growing interest in investment in human resources. Further researches were conducted along these lines, and educational expenditure came to be regarded as an important form of investment.

1.5.3. Returns To Education or Investment in Human Capital Approach

Education gives positive direct and indirect returns to the educated person. Direct returns are in the form of increased earnings and are easily measurable. Indirect returns cannot be measured easily. Indirect returns include among others, a positive attitude of people, a competitive work culture, an amicable and conducive environment in which development takes place. It has been found that education gives a high rate of return on investment. The rate of return approach is useful in estimating the contribution of education to economic growth. It is useful in determining how much is to be invested on education and other sectors of the economy. It is also helpful in finding out the difference between returns to the individual and to the
Introduction

society at large. This approach has been criticized on the following grounds. Firstly, it fails to consider the non-economic intangible benefits of education, which are of special significance in underdeveloped countries. Secondly, the data is difficult to obtain for a precise calculation of the returns attributable to education.

1.6. BENEFITS OF EDUCATION: CONTRIBUTION TO ECONOMIC GROWTH

There have been long discussions on the benefits of education for development and social change. Benefits of education may be direct or indirect, social or private, tangible or intangible. Those benefits which are enjoyed by the individuals in the form of higher earnings, occupational flexibility, better status, cultural refinement etc are termed as “direct benefits”. On the other hand “indirect benefits” are enjoyed by the individual as well as the society. A large number of the population is ready to accept new ideas, new challenges, greater tolerance which goes to ease communal tensions, improvement in social and cultural levels, promotion of democratic values, positive thinking and behavior of people, productive use and enjoyment of leisure are some of the benefits to society which are at the same time enjoyed by the individual as well. These are the intangible benefits of education. They have a powerful effect on society and on the economy and create the right type of environment which promotes development in the economy.

A relevant question regarding educational investment is related to the stage of economic development at which intangible capital formation becomes significant. As far as the early period of industrialization in Western Europe is concerned, or even that of United States, the contribution of education to economic growth became significant at a fairly advanced stage of development. However, the situation is
Introduction

different in developing countries now days. Advanced countries can provide latest
techniques and equipment to obtain necessary skills and technical know-how to avail
of opportunities so provided. In the modern world, one can acquire improvements in
skills and knowledge through education which have become necessary for economic
growth. There is a positive correlation that exists between per capita incomes (GNP)
and adult literacy rates. In the high income countries adult literacy rates are 98% to
100% while in low income countries the percentage ranges from 10% to 60%.

Since the developing countries have resources available with them, these resources
are to be carefully distributed to various programmes of development. Also
investment in education has to be judiciously planned. The proportion of GNP to be
allotted to education assumes relevance. Besides this, priorities have to be given
according to the types of education in which investible resources are allocated,
whether universal primary education is essential, secondary education or an extensive
system of higher education or vocational education and training. It depends on
requirements of individual countries.

Higher education is directly linked to social welfare of the country. Whenever higher
education is received by an individual it benefits both the individuals and the society.
The private benefits for individuals include better employment opportunities, higher
income, and increased ability to save and invest as well as more opportunities for
general upward social mobility. The public benefits are those which include the
creation of well trained personnel including lawyers, doctors, scientist, engineers,
administrative and management personnel and teachers. Higher education can propel
nations into advanced stages of development if a nation’s workforce develops the
ability to access vital information from elsewhere by exploiting the benefits of the digital revolution.

1.7. CHALLENGES IN HIGHER EDUCATION

The aim of education is to achieve overall development and enjoy enlightenment of mind, broaden the vision, enable character building which can be beneficial to the individual himself and to the society and nation at large. Dealing with the problems and challenges in the field of higher education one has to perceive the scenario in totality. The socio-cultural, political, economic and technological advancements are to be considered and analyzed while viewing the prospects of higher education in our country.

In this era of globalization and liberalization, India is undoubtedly becoming progressively more integrated into the global economy. In such a situation, the role of higher education becomes all the more important and crucial. It should identify the emerging challenges and respond to them more adequately and effectively. In today’s world of high competition and fast changing technology, good quality higher education is necessary for the survival as well as socio-economic development of a nation. India has an advantage of a ‘demographic dividend’ compared to developed countries which have an ageing population. However, full potential of this advantage can be realized only through a well planned and well organized system of higher education.

There are various challenges in the field of higher education which are to be met through a time bound action plan. Some of the challenges are discussed below.
The fast increasing population and increasing financial burden on the existing conventional education system is one of the challenges of higher education. An alternative to this is offered by the mode of distant learning or open learning system which can cater to the needs of thousands of people who want to study but cannot afford to do so through the conventional system either on account of financial constraints or time constraint, being involved in some occupation or the other. Open universities should be fully developed as a priority for which networking at national and international level is required.

Another issue relates to the relative role of private agencies and government machinery in meeting the financial burden of higher education. The issue thus concerns privatization as against state responsibilities. Because of increasing financial constraints the government may not be able to meet the financial demands of the universities and hence privatization of education may be a necessary step. It is imperative that quality is not compromised with in this process of expansion of higher education.

Another challenge is education of girls. It is often pointed out that if we educate a girl child, we educate a family. In terms of empowerment of women it becomes our prime responsibility to educate them at every level. This needs attitudinal change, increased level of motivation and proper planning.

The major challenge before the Indian higher education system today is to create new strategies, policies and programmes of revolutionary nature that would lead to qualitative improvement, equality, integration of socio-cultural nature and involvement of all people in the process of development.
Our higher education system suffers from ambiguity, multiplicity and incompatibility of objectives. It lacks clarity of purpose and fails to evolve priorities which, in turn, affect its performance adversely. The courses offered by most of our higher educational institutions are archaic, rigid and irrelevant to meet the emerging needs and challenges of the 21st century.

Higher education in India is facing challenges, not only in producing quality manpower but also scholars of excellence. The universities in India seem to be far behind the universities abroad in terms of academic standards and research. Our country needs top class research based universities in order to compete successfully in the knowledge driven world of the 21st century.

Above all India faces stiff competition with a well establishes higher education system of developed countries. Ever since higher education system has come under the ambit of WTO under the General Agreement on Trade in Services (GATS), we in India have been exposed to competition from foreign universities. All of these are not reputed institutions, and adequate safeguards have to be placed to see that domestic interests are not jeopardized.

These are some of the challenges which higher education is facing in the contemporary world. These challenges are very real and can be countered through effective policy making and time-bound action plan with a practical vision.

1.8. OBJECTIVES OF THE STUDY

India is a developing country and it requires resources for promoting economic growth and development. Education plays very important role in the development of
the country. The present study aims at looking various aspects relevant to higher education in the following manner.

(1) To review the trends in the expansion of higher education over the planning period.

(2) To analyze the trends in the financing of higher education.

(3) To analyze expenditure on higher education in selected states.

(4) To explore the feasibility of alternative sources of finances.

1.9. HYPOTHESIS

(1) Educational Expenditure as percentage of GDP has remained constant over the period under study.

(2) Higher Educational expenditure as percentage of social service expenditure has remained constant over the period.

1.10. METHODOLGY AND DATA BASE

The present research has been conducted on the basis of secondary data. Main sources of information for the present study are Annual Reports of the UGC and various publications of Ministry of Human Resource Development, Government of India. The Annual Budgets presented by Union Government also constituted the main source of information. State Budgets were also consulted for the purpose. The information from various Five Year Plans and Annual Plans, Plan reviews and evaluation and the findings of different Committees/sources were consulted. Other relevant data was obtained from National Institute of Public Finance and Policy (NIPFP), New Delhi.
For comparing the status and obtaining other related details of various countries, the relevant reports published by World Bank, United Nations Development Programme, UNESCO and reports of other relevant agencies were consulted. Apart from official publications a wide range of literature available on the subject has been made use of in collecting and analyzing data.

When data are gathered from plethora of agencies associated with a certain purpose, the problem of reconciling conflicting data poses a hindrance. For example, enrolment figures in higher education differ widely in Plan documents and records of the Education Directorate. Plan expenditure figures for a certain period differ widely from one document to another. Wide discrepancies were also found in data collected from UGC Annual Reports and Annual Reports of Ministry of Human Resource Development. We tried our best to overcome this by using our own judgment and by comparing relevant data from varied sources.

In the present study Financing of Central Universities has been treated separately because government provides lump sum funds to different Central Universities and it is their prerogative to allocate these funds for different purposes in Universities according to their requirements at that point of time.

1.11. RELEVANCE OF THE STUDY

It has already been examined that education has direct bearing on the quality of human resources by raising the level of productivity. All form of education, together with imparting skills, improves attitudes as well. Expenditure on education and training yield a continuing return in the future and it is for this reason that they are now considered to be an integral part of capital expenditure in an economy. An
improvement in human capabilities is as important as improvement in tangible physical capital and hence investment in it. It is now increasingly recognized that shortage of skills and knowledge and not so much shortage of savings in many underdeveloped countries is responsible for their inability to absorb capital in productive investment. Thus, attention has shifted from capital to education, from investment in material capital to investment in human capital. In order to meet the challenges of the 21st century and to acquire a competitive edge, the higher education system of India has to transform to make it more socially relevant, technology-oriented, diversified and of high quality. The skills and specialization of graduates produced by our system should match the real needs of the productive sector in the market place and the changing needs of our society. In view of the crucial constitution of education especially higher education to growth and development it becomes all the more relevant to examine how much and in what direction growth in higher education has taken place and whether the growth has been commensurate to the needs of the economy. The central government incurs a large expenditure on higher education by financing central universities and centrally governed institutions of higher learning, as well as some development expenditures of state universities and colleges. However the greater part of expenditure on higher education in the states is incurred by the respective governments or the institutions themselves. States are perpetually short of funds and this has adversely impacted not just the development but even routine functioning of state universities and colleges, self-financing by colleges and even universities is being resorted to for expansion of the higher education sector. There is realization that quality is being compromised for quantity. These issues have assumed relevance in the present scenario of our higher education
system. Hence, there is the need to study the trends in growth and financing of higher education.

1.12. STUDY AREA AND PERIOD OF THE STUDY

For purpose of this study data for both centre and states has been taken into account. To present the picture of education at the level of states, fifteen major states have been selected. The major part of the study pertains to the post-reform period.

1.13. LIMITATIONS

(1) Due to non-availability of relevant data a more detailed study of central government expenditure could not be conducted.

(2) Discrepancy of data published in different sources posed a big hurdle in analysis of the same.

(3) An empirical analysis could not be conducted due to insufficient familiarity with handling of statistical tools.