Chapter I
Introduction
INTRODUCTION

The role of education in economic development has always been recognized by economists, but earlier economists could not incorporate education in the formal core of analysis.

The economics of education is a branch of economic theory which has developed rapidly since 1960's, but has a long history. Several of the classical economists writing in the eighteenth and nineteenth century including Adam Smith, Alfred Marshall and John Stuart Mill drew attention to the importance of education. There is the powerful dictum of Marshall that “knowledge is our most powerful engine of production.”

The revival of interest in the concept of investment in human capital developed in the U.S. and U.K. in the late 1950’s and early 1960’s and stimulated new interest in the question of relationship between education and economic development. Since that time there has been tremendous growth of research and publications in the area of the economics of education. Efforts have been made to study the contribution of education to economic growth, the profitability of investment in education, the role of educated manpower in economic development, the costs of

education, and financing of education etc.

In economic development the fundamental problem is the creation of the capacity to generate wealth rather than create wealth. This capacity lies in the people of the country and consists of brain power. It was Irving Fisher, a great economist, who stated that all scarce resources that render economic services are forms of capital and that the services from the total stock of capital at a given date are the available income streams. Thus economic growth is a consequence of additions to quality and quantity of the stock of capital.

The common view of capital was confined to material things but physical capital accounts for a small part of the total stock of capital in countries that have achieved a high level of per capita income.

Physical capital itself consists in large part of knowledge because it is advances in knowledge that have made computers and other machines. The improvements made in physical capital overtime were possible due to advances in knowledge.

Lack of physical capital especially infrastructure was initially thought to be the critical constraint on development. Later, the contribution the human capital makes to development came to be emphasized. Research on the productivity of education has elucidated the link between human capital and economic development. Most important work in this area was done
by T.W. Schultz, "Investment in Human Capital", in 1961 and later by G.S. Becker "Human capital: A Theoretical and Empirical Analysis with Special Reference to Education," in 1964. Accumulation of human capital emerges from all this work as one of the most important and powerful engine of development.

The concept of human capital refers to the fact that human beings invest in themselves by means of education, training, health and other activities which raises their future income by increasing their lifetime earnings. Economists use the term "investment" to refer to expenditure on asset which will produce income in the future and contrast the investment expenditure with consumption, which produces immediate satisfaction but does not create future incomes. Assets which generate income in the future are called capital.

The formation of human capital by education has been high on the research agenda of an increasing number of economists. It is because the effects of education on economic activities are pervasive. In the words of Prof. Myers and Prof. Harbison, the broadening of the capacities of man, the extension of his knowledge and the upgrading of his skill may lead to the available road to "economic development" which results only from action. Hence the improvement of educational level and the betterment of health of population, plays a crucial role in the development of
underdeveloped countries.2

The concept of human capital also helps in understanding the productivity of labour. ‘It was often taken for granted that technical progress automatically follows the accumulation of mere capital and ignored the consideration of state of knowledge as an important complementary factor in the process of production. If a new machine of superior technique is installed then due importance has to be given to the personnel who would maintain and operate it. Thus accumulation of capital is wasteful unless accompanied by complementary investment in human capital.

The importance of the human capital was also realized when studies on national income were conducted. The increases in national income were larger than can be explained by mere increases in land, in physical reproducible capital and in manhours. Investment in human capital provided the explanation for this increase in national income. An economic growth rate of 7-8 percent is not possible without 10-12% of industrial growth and industrial growth of this level can be sustained only with substantial investments in human resources.

The full use of human capabilities require considerable investments in human beings and the returns from such investments are extremely

high. A World Bank study shows private returns to primary education as high as 43% in Africa, 31% in Asia and 32% in Latin America.

Investment in human capital thus increases peoples productivity and enhances the chances of their employment by raising the potential for future economic growth.

The developing countries have made great advance in education over the past two decades. Most of the schools built in developing countries are public schools that are financed and staffed by the government.

India too realized the importance of educating its population for rapid economic development and made concerted effort in this direction. For our study here, we have concentrated mainly on higher education and its role in India's economic development.

This chapter consists of three sections. Section I deals with growth of education in India, Section II with the objective and sources of data and Section III with the concluding remarks.

1.1 Growth of Higher Education In India

During the past decades there has been phenomenal expansion of educational facilities in India. This expansion and diversion had been carried out steadily through the years.
Indian higher education as it developed in the 19th century was obviously influenced by British models. The educational policies were designed to serve mainly British colonial interests. Higher education also remained mostly concentrated in and around metropolitan port towns of Calculatta, Bombay and Madras. Everywhere higher education was more widespread amongst men than women and in urban areas rather than rural areas.³

In independent India, higher education had to serve objectives quite different from those of colonial period. The obvious need was for building up a self reliant and growth oriented economy, an integrated nation and forward looking egalitarian society. Higher education was rightly considered to be the major instrument for effecting modernisation of tradition. The linkage between education and development and the creation of literate and skilled work force was recognized by educational planners. Expansion of elementary education and strengthening higher education came to be simultaneously emphasized.⁴

The percentage of students in higher education to the total population in age group 17-23 years increased from 0.8 percent in 1950-51 to 4.8 percent in 1980-81 and above 6 percent in 1991-92.

In 1992-93 there were 48,04,773 students of whom 88% were in

⁴ Ibid.
undergraduate courses. For the same year enrolment in arts was 40.4%, science 19.6%, commerce 21.9%, engg/technology 4.9% medicine 3.4%, and agriculture and veterinary science 1.4% of the total enrolment.

**Enrolment of Women:**

It is now recognised beyond doubt that sustainable development of an economy is related to the development of women. Where women have advanced, economic growth has been steady. This is especially so because social returns of a woman's education go far beyond individual welfare, it acts as an agent of national development through improvements in the standard of health hygiene, reduction in child mortality rate, increase in labour productivity, decline in fertility rate, greater political empowerment and improved sense of nationality.

In India, girls education is constraint by various economic, social, cultural, political and educational factors. But inspite of these limitations, we find that women's enrolment in education especially higher education has made remarkable progress and their numbers in various institutions of higher education has increased.
Table 1.1

No. of Women per Hundred Men

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total women enrolment</td>
<td>40</td>
<td>150</td>
<td>748</td>
<td>1437</td>
<td>2191</td>
</tr>
<tr>
<td>(in thousand)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of women per hundred men</td>
<td>14</td>
<td>23</td>
<td>NA</td>
<td>48</td>
<td>52</td>
</tr>
</tbody>
</table>


It can be seen from the table that women enrolment has increased from 0.40 lakhs in 1950-51 to 14.37 lakhs in 1990-91, recording an increase of more than 36 times over the forty year period. The number of women enrolment has increased to 20.65 lakhs in 1994-95 and 21.91 lakhs in 1995-96. As the data shows the number of women enrolment per hundred men also registered an increase during the period 1950-51 to 1995-96.

It was quite low in 1950-51 only 14 women per hundred men, but thereafter there was a change and in 1960-61 it was 23 women per hundred men and in 1975-76 the figure stood at 33 women per hundred men. In 1990-91 there were 48 women enrolment per hundred men and in 1995-96, it was 52 women enrolments per hundred men. Thus this time women enrolment had increased significantly.


Table 1.2

**Growth in enrolment of women**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total enrolment</th>
<th>Women enrolment</th>
<th>%age of women enrolment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961-62</td>
<td>9,80,380</td>
<td>1,69,627</td>
<td>17.3</td>
</tr>
<tr>
<td>1970-71</td>
<td>26,11,292</td>
<td>5,59,522</td>
<td>22.6</td>
</tr>
<tr>
<td>1980-81</td>
<td>27,52,437</td>
<td>7,48,525</td>
<td>27.2</td>
</tr>
<tr>
<td>1990-91</td>
<td>44,25,247</td>
<td>14,36,887</td>
<td>32.5</td>
</tr>
</tbody>
</table>

Source: University Grants Commission – University development in India: Basic facts and figures— various issues.

The women's enrolment as a percentage of total enrolment has consistently increased over the years. At the time of independence, women constituted only 9.3% of all students in institutions of higher education, but this percentage of women student enrolled in colleges and universities increased to 17.3% in 1961-62 and 18.5% in 1962-63.

The growth rate has continuously shown an increasing trend albeit very slow. In 1970-71 the percentage of women enrolment to total enrolment was 22.6% and for 1980-81 this was 27.2%. Therefore, in the whole decade, the increase in enrolment was only of 5%. Similarly, for
1990-91 the figure was 32.5% and increase of only 5% again for the whole decade.

Sex-wise the distribution of enrolment at different stages of study reveals that since 1960's the enrolment of women as percentage of total has been going up at all levels viz. graduate, post-graduate and research levels.

Table 1.3

<table>
<thead>
<tr>
<th>Year</th>
<th>Graduate</th>
<th>Post graduate</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980-81</td>
<td>27.2</td>
<td>28.2</td>
<td>27.3</td>
</tr>
<tr>
<td>1990-91</td>
<td>32.3</td>
<td>34.2</td>
<td>36.7</td>
</tr>
<tr>
<td>1994-95</td>
<td>33.6</td>
<td>35.6</td>
<td>38.5</td>
</tr>
<tr>
<td>1995-96</td>
<td>34.1</td>
<td>34.0</td>
<td>39.2</td>
</tr>
</tbody>
</table>

The data in the table above shows that at the graduate level, enrolment of women as percentage of total enrolment increased from 27.2% in 1980-81 to 32.3% in 1990-91 and to 33.6% in 1994-95 and 34.1% in 1995-96.

Similarly at the postgraduate level, the corresponding increase was from 28.2% to 34.2% and 35.6% in 1994-95. It however, fell marginally
to 34.0% in 1995-96. At the research level the increase was 27.3% to 36.7% and to 38.5% in 1994-95 and 39.2% in 1995-96.

It is interesting to note that the percentage of women enrolment at the research level has increased faster than percentage enrolment at other levels.

However the increase in women's enrolment show a healthy trend in the sense that the incidence of their enrolment has uniformly increased at all levels of education.

The faculty wise breakup of data about women students is not available for all the years under study.

In keeping with the quantitative expansion in enrolment, there was also an increase in the number of educational institutions in India. The number of universities shot up from 27 in 1950-51 to 196 in 1991-92 and 207 universities at the end of 1995-96 and the number of colleges (general education) increased from 498 to 5,058 during the same period and 9278 at the end of 1995-96.

Apart from the need of higher education for development and turning out trained and skilled manpower, the pressure from those classes who were denied higher education for centuries and regard it as passport for
jobs and the push exerted from below by the rapid expansion of school education account for the swift growth of higher education in post-Independent India.

The number of primary schools increased from 210 thousand in 1950-51 to 566 thousand in 1991-92, higher secondary schools from 17 thousand to 82 thousand in the same years.

The enrolment in these two institution also increased very rapidly. The number of pupils in primary schools and secondary schools in 1950-51 were 192 lakh and 12 lakhs respectively. Their number in 1991-92 were 1,015 lakhs and 212 lakhs correspondingly.

While it is important that enrolment at the university level increases so that we may keep pace with the developed countries of the world, it is equally important that this rate has some correspondence with the rate of economic growth.

During the decade 1960-61 to 1969-70 university enrolment increased by roughly 12-14% per annum creating such problems as educated unemployment in the country and dilution of facilities in institutions of higher education. The growth dropped to 5.9% in 1974-75 and to 2.1% in 1978-79 and picked up to 4.1% in 1989-90. But since 1990-91 it has remained at 5.1% per annum.
The stage-wise enrolment at the graduate, post graduate and diploma/certificate levels has shown a consistent trend. The enrolment at graduate level increased from 45.1% in 1960-61 to 87.2% in 1980-81 and 88.1% in 1989-90 and to 88.2% in 1995-96.

But the enrolment at postgraduate and research level has increased slowly in India. It increased from 5.7% in 1960-61 to 9.9% in 1980-81 and 9.5% in 1989-90 and 9.4% in 1995-96 for the postgraduate classes. Similarly, for research level the increase has been of 0.5% to 1.2% and 1.1% during the same period and it has also remained same in 1995-96.

As far as faculty-wise enrolment is concerned, we observe that maximum increase has been in the enrolment in Arts, followed by Science. The enrolment in Medicine, Engg./Technology and Law increased at the rate of 3.4%, 4.9%, 5.3% which is not adequate for any developing country because these branches provide the critical skills which are so essential for economic development.

Thus despite a quantitative improvement in enrolment, we find that those strategic skills which are most crucial for developing countries have failed to keep pace with the demand for them.
1.2 Objectives, Data Sources, Limitations and Plan of Study

1.2.1 Objectives of the study:

The present study is an attempt to examine the role education has played in the economic development of India during the period 1960-90. Earlier the period of study was since 1951 but due to nonavailability of comparable data since 1951, we have now taken 1961 as our base year. Moreover, it was only after the establishment of University Grants Commission in 1956, that accurate data about the enrolment of students was made possible. The Net National income data is at factor cost and 1980-81 prices.

As the country develops, the contribution of education in national income also increases. We have in our study concentrated on higher education and tried to analyse how increase in higher education is interlinked with the increase in national income over the years. There is a higher level of correlation between enrolment in education (and hence investment in education) and a country's level of economic development as expressed by GNP per capita.

1.2.2 Nature and source of Data:

The data used for our study here is largely secondary in nature. The sources of data include Government of India's Publications. However, the major part consists of University Grants Commission's Annual Reports and
other Publications such as University Development in India: Basic facts and figures.

Data has also been obtained from the publications of Centre for Monitoring Indian Economy. The figures of salary structure has been obtained from Swamy's Handbook and is based on Fourth Pay Commission Report.

1.2.3 Limitation of the Study:

The work done so far on education establishes the fact that education is a very important factor in economic growth. However, if one attempts to use it as a guide to determine resource allocation, then we encounter serious difficulties, especially in developing countries. This is so because the data used is from developed countries where educational system are well organised and effectively linked to their socio-economic needs and already have a lively employment market.

On the other hand, opportunity costs of students and teachers is low in developing countries because real resources are not to be withdrawn from other productive purposes, to the same extent as in developed countries. Moreover, the demographic composition in developing countries which has a higher proportion of children than in developed countries makes the cost of mass education much higher and as a result the cost
of education too, goes up.

Further, the methods evolved in determining the return from education to developing countries cannot be easily used as the type of data required is not available.

Since data used here has been obtained from secondary sources, it should be taken with all its shortcomings. Though education is the largest source of human capital consisting of acquired abilities, it is difficult to analyse the economic value of education because the costs of education are well-concealed and not all the benefits accrue to the students. They are frequently widely dispersed.

The other limitations of our study lie in making certain assumptions:

1. We have constructed the wage chart on the basis of fourth pay commission report about the salary structures and presume this to reflect the earnings for general and professional education.

2. We further assume that there exists no unemployment in the economy so that if the students were not studying they would have been gainfully employed.

3. We have also not taken into accounts the private cost to students. Only the cost incurred by UGC for higher education is taken in the
computation of total costs.

To the extent that these assumptions lack realism, our conclusions should be viewed with caution.

1.2.4 Plan of the Study:

Our study begins with the survey of relevant literature (chapter II). It deals mainly with the available literature on education and its contribution to economic development. Most of the studies have been done for the U.S. economy. Similar studies do not seem to have been conducted for the Indian economy. PR Panchmukhi, however, has based his work on T.W. Schultz's work.

In chapter III we present an analysis of human capital formation. It deals with the scope of education and its development in India since 1960. Besides this the chapter also concerns itself with the contribution of education to development and how growth in education and economic development are related.

Lastly, chapter IV consists of the summary and conclusions of our study.

1.3 Concluding Observations:

The key to any development effort is the formation of human capital.
This human capital consists amongst other things, of investment in education. This investment in education is essential for economic growth of the country. The importance of this fact was emphasized by the classical economists also. Later on many of the studies conducted on sources of national income in developed countries revealed the important role played by education.

As a result soon after independence India laid great stress on providing education to its population. There was rapid growth in the number of educational institutions and enrolment rate has also increased during the period since independence.