CHAPTER II

ROLE OF EDUCATION IN ECONOMIC DEVELOPMENT

I Introduction
II The scope of rationale of studying economic of education
III Relation between economic development and educational development
IV Human capital formation
V Process of Human resources development
VI Indicators of Human development
VII Life cycle of Human Development
VIII Conclusion
2.1 Introduction:

Education and development of a country are interrelated and interconnected. There is little progress without education. “All developed countries have high rates of literacy with a few exceptions, countries which are educationally advanced enjoy better standard of living”. Literacy and skills have now become a necessary tool in the process of development because they are indispensable source of communication. Whenever verbal communication is not possible, literacy comes to the aid of the individual. In the educational system today, the books are the necessary carriers of ideas, concepts knowledge and of skills. For any society, education is considered as an important indicator of development. Literacy being the simplest and easily measurable aspect, its percentage in society is taken as an indicator of its development.\(^2\)

Harbison\(^3\) points out that the basic problem in most of the under developed countries is not of poverty of natural resources but of under development of their human resources. Further he says “The way to start seems obvious. Quite uncomplicated way is to build schools and launch massive programmes of primary and secondary education of technical training”.

2.2

Nations have to pass through, several stages in educational development, ‘Madam Beeby’ has listed four stages which are given below.

a. Dame school stage:

It is more or less a single teacher school. The teacher is poorly educated and has no professional education or training.
b. Stage of Formalism:

In this stage the status enters the educational scene, the teacher's educational level continues to be low, but some professional teaching is given to them. Departments of education come into existence and teachers are assured of their salaries.

c. Stage of Transition:

It is stock locking stage countries try to modernize their educational and systems and national policies are involved. Innovations and research in education are increased. There will be better salaries and more freedom to teachers.

d. Stage of Meaning:

Educational institutional enjoy autonomy. Teachers will be proud of their profession and there will be full academic freedom. There will be flexibility in educational practical to enhance healthy competition.

2.3 The Scope and Rationale of Studying Economics of Education

However, the focus of this analysis is the rationale behind studying the subject of economics of education. To deal with the topic a few content areas that are generally included in the syllabus of economics of education are selected and the use of studying them is explained.

Relationship Between Education and Development:

One of the content areas studied in this subject is "Education and Development" which may be understood as economic, social, cultural and political development. However, the relationship of education to economic development is more focussed in the study of this area.
The positive relationship between education and economic development is no more a matter of human expectation. Available evidence supports the relation to be positive and authentic. The criteria used to understand this relationship are the following:

(i) The co-relation approach (ii) The residual approach (iii) The man power planning approach and (iv) the rate of returns approach.

2.3.1 The co-relation approach:

This proceeds with the positive co-relation that exists between the educational indicators such as enrolment rates at different levels of education and human resource development indicators on the one hand and the economic development indicators such as per capita income, national income, etc. on the other. Though it is not possible to give the results of the many studies conducted in India and abroad in respect of each of these approaches here quoting the results of at least one or two studies will make the statement made in this respect quite clear. Hence the results of one or two studies are quoted. For example, Goel (1975) pp.23 made a study using the correlation approach to substantiate the relationship. He found enrolment at the primary level (n1) secondary level (n2) and at the university level (n3) to have been correlated with per capita income at current prices in India between 1951-1952 to 1970-71 to the extent of 0.85, 0.94 and 0.95 respectively. The result of the co-relation studies indicates that education should not be taken as a casual affair or only as consumption goods. It has to be treated as an investment good that yields monetary benefits in future. In fact many researchers have argued that education is positively related to cultural, social and political development. However, the results of these studies have to be considered in the light of a perfect cause
and effect relationship that exists between the educational indicators and the indicators of development.

2.3.2 The Residual Approach:

The residual is an amalgam of many varied factors namely, education, training research and development, public health product mix, economies of scale and structural charges. Each of which accounts for parts of the residual according to the exponents of model Adiseshaiah, (1979 P.8), Solow (1961)8, computed a residual equal to 87.5 per cent of the increase in output per man hour in the 1909 and 1949. Dension (1962)9 found that education was the source of 23 per cent of growth of total real income and 42 per cent of the growth of the total real income per person employed.

The result of the residual approach also suggest that education contributes to economic development and hence the need to invest in education. It further suggests that the size of output increased due to the residue is rather high and hence education should get priority in terms of investment.

2.3.3 Man Power Planning Approach

The objective of manpower planning is beautifully given in the Kothari Commission Report10 stating, that in manpower planning a suitable trained person would be available for every job to be done and every educated person would find a job appropriate to his education and professional training (NCERT p.176, 1970). The purpose of manpower planning is to plan educational systems with a view to producing the appropriate amounts and kinds of manpower. Any imbalance in the manpower produced in a country would have disastrous consequences of unemployment and hence...
social unrest if it is in excess or a shortage of manpower and the consequent high rate of salaries and under utilization of resources leads to a slow growth of economy. Using manpower forecasting techniques, optimum manpower for the terminal year is estimated and the same is produced. In our country manpower in some occupations has been produced using manpower planning approach. A student studying this area would get a theoretical knowledge of Manpower Planning Approach. More than this he becomes conscious of the need to produce man power based on the manpower planning, strategy and develop favourable attitude to the approach.

2.3.4 The Rate of Return Approach

The fourth approach is the Rate Return Approach. Rate of return is a specific technique that comes under the general technique of cost benefit analysis. Cost-benefit analysis is a technique where the discounted social or private costs of a level of education are compared to the discounted social or private benefit of that level of education in order to determine its profitability. Heyneman (1979) found out the average of eight social rates of return. Studies conducted in India for primary (16%) middle school (13.3%), matriculation (13.1%) and graduation (10.3%) and engineering (17.4%) courses. The average private rates of return for primary (19.5%), middle school (17.3%), graduation (12.2%) and engineering (25%) calculated by Heyneman (1979) are much higher than the respective social rates of return. In case of matriculation, the average private rate of return (10.4%) was lower than its average social rate of return (13.1%). The following comment made by Psacharo poulos (1981), on the implications of difference of social and private rates of returns of higher education of 44 countries including India sounds
quite significant for education policy. "There is large difference between the private (13% respectively) suggesting that there exists rooms for private finance at the University level. A shift of part of cost burden from the state to the individual and his family is not likely to lead to disincentive of investing in higher education given the present high private profitability margin".

Rates of return point to the need for changes in resource allocation in favour of those levels of education with higher rates of return. Woodhall (1970) gives the following uses of costs benefit studies that include rates of return in addition to Benefit Cost Ratio and Net present Value of the project analysis. "(a) to compare the relative profitability of education and other forms of social investment (b) to compare the relative profitability of different types or levels of education (c) to compare the social rate of return to education in one country with another (d) to compare the relative profitability of education to society and to the individual and (e) by comparing social and private rates of return to education at different points in times. According to Woodhall cost benefit analysis studies provide direction signals for investment policy.

Unit Costs:

Calculation of unit costs to different course units also fall within the scope of the subject of Economics of Education and they have their specific uses for policy makers. "Unit cost of education is the sum of student inputs (units contributed by students) and institutional inputs (those contributed by institutions) per unit of output (pupil years) as defined. Unit cost may be calculated for a unit course of study and then for an institution running several course units."
Education and Equity:

Another important unit covered in Economic of Education is Education and Equity. Equity is fairness or social justice. Equality of opportunity and equity in education are synonymously used. Equity in education can be achieved by pursuing policies of protective discrimination in favour of the disadvantaged sections of society. Public expenditure on education is regarded as an important instrument for reduction of inequality, particularly in developing countries. In general what is likely to happen is that when the number of educated persons increase, wage differences narrow down leading to redistribution of income. On the other hand if a level of education such as higher education is highly subsidized, it is likely to be more available to the rich and hence it is counter productive in respect of promoting equity. In developing countries where human capital view is accepted, public expenditure on education in such countries is widely regarded as an important instrument for reduction of inequality. The studies conducted in this respect suggest that the investment in primary education is highly egalitarian investment in secondary education to be balance egalitarian and post secondary education to be clearly pro-rich.

According to Ahuluwalia (1974) primary education was more important in explaining 40 per cent of income distribution while secondary education was more significant in explaining the middle of the distribution. "It has been shown that income distribution is better explained by educational distribution rather than the purely economic factor of per capita income" (Pscharopoulos, 1977).
Education - Consumption Good or Investment Good:

In economics of education the other unit that is covered relates to whether education is a consumption good or whether it is an investment good. Today it is agreed upon that education comes under both consumption and investment aspects. If education is a source of pleasure, satisfaction, prestige, status, it is giving consumption benefits. On the other hand, it gives future monetary benefits. Such as salary or output or income it comes under investment aspects. Lewis (1960) distinguishes the consumption and investment components of education that from the standpoint of economic development one may distinguish between types of education which increase productive capacity and types which do not. Teaching an African cook to read may increase his enjoyment of life but it will not necessarily make him a better cook, education of the former kind I have called investment education, while the latter kind is called consumption education.

If education is treated as a consumption good the priority it would get would be lesser and if it is treated as an investment good it will have a higher priority in allocation of resources as that of any other investment sector which is financed on priority basis.

2.4 Relation between Economic Development and Educational Development:

Economics of education is relatively recent branch of study abroad as well as in India. It is really a decade and a half old. It really forms a part of the new approach to "Investment in Human Resources. The entire new approach owes much to the conceptual work done by T.W.Scheuldz Curg, Beker Edward Dension, Vaizey and others. Expenditures on education health, migration sanitation nutrition and some of the welfare activities used to be treated as more consumer outlay as ends of economic activity. It is
now being recognised as ends of expenditure and are also means to certain economic ends. They can be growth promoting factors with important consequences for earning of individuals personal income. Broadly the idea is that human capabilities, skills and productivities can be developed by expenditure on human beings. These expenditures are not merely consumer out-lay aimed at satisfying current needs, they have long run favourable effect on efficiency of human beings as productive agents in manner similar to the investment in material capital. To the extent to which investment in “Human Capital” stands on a similar footing tools and techniques become applicable to the problems of human capital formation. It is this which constitutes the hard core of the achievements of economics of education.

Classical Writers:

While there is widespread interest in education as means of furthering economic development. There has been remarkably little explanation into the various channels through which education promotes economic development. In this connection it may be of interest to go back to the classical writers. From a strictly economic point of view the classical writers do not see much need for mass education. Malthus, Mill and Senior however, thought of education as promoting attitude of absence, continuous and class peace and as increasing options to marriage and motherhood to women. Senior also emphasized the point that under compulsory education children would no longer be earning assets. In other words education would attempt population growth and promote habits of savings. These two are relevant considerations for an under developed country such as India but we do not find much discussion of these issues in the Indian literature.
Dual Role of Education:

How does education affect economic development? It may influence economic development through changing the attributes relevant to economic development or it may influence economic development in its capacity as a relevant economic input. Thus to illustrate the former case education may alter attitude to work consumption preferences, savings propensities economic rationality, adaptability, innovativeness, flexibility, attitude family size and various social attitudes relevant from the economic point of view. In the latter case education is considered to be a process of skill formation and in this aspect, it is treated on par with the process of capital formation. It is less easy to ascertain and quantify. Generally, some sort of a educational development and level or rate of economic development is used to ascertain the direction and strength of influence of the one on the other. Influences which work through education as an input are easier to quantify.

With these broad observations, we may discuss, a few important contributions.

Education as an Agent of Change:

On the basis of the idea that education and economic development are correlated, Harbison and Myers (1966) in their “Education, Manpower and Economic Growth” have examined the pattern of relationship between human resource development and the stage of economic growth. They have constructed indices of human resources development on the basis of the enrolment ratios at various stages of education in different countries and have arrived at various policy conclusion. Sen (1966) has provided an important methodological criticism of their approach. In the first place,
according to him the enrolment ratios do not indicate at all the stage of human resources
development. The stage of human resources development is indicated by the stock of
educated workforce. Current enrolment ratios merely indicate the additions made to the
stock. Secondly, if the objective is to throw light on the desired directions of educational
development, we should be able to find out definite relationships. From this point of
view he finds that the number of second-level and third-level educated men per unit of
G.N.P. for nine countries do not show any simple relationship. Thus one should be
cautious while drawing policy conclusions from the studies such as these. Thirdly, the
weight of 5 selected for higher education for constructing the composite index is also
criticised as being arbitrary, the omission of primary education is considered misguiding.

K.Mukerji and N.Krishnarao have tried to examine the relationship between
investment in education and economic growth in India. For this purpose, they have
related annual enrolment rates per 100 of population at different stages of education in
different states with absolute levels of state per capita incomes and the rates of growth of
state per capita incomes during the decade 1951-61. They also draw attention to the
methodological problem that, while the social and educational measures are asymptotic in
the sense that they have an upper limit for instance literary rate cannot exceed 100;
economic indicators i.e. enrolment rates per 100 of population for each state for the year
1951-52 and 1959-60 and correlated them with the levels and growth rates of state per
capita incomes centering on 1955-56. This automatically introduces a lag/lead
relationship of 4 years. They have worked out 10 correlation co-efficient relationships
for 1951-52 and 10 for 1959-60. These are the correlation enrolments per 100 of
population in primary education, secondary education, higher technical education, higher non-technical education and literacy rates with the levels of state per capita incomes and rates of growth of per capita state incomes respectively. They found that except the two correlation between enrolment in higher technical education and the rate of growth of per capita income, all the correlation coefficients are non-significant. They come to the conclusion that only higher technical education can be considered as economic investment. Other forms of educational expenditure had better been considered consumption expenditure. There are several limitations of the study, some of them are acknowledged by the authors. The analysis is limited to a short period. Across the states the mobility of labour would vitiate the results based on correlation of the above type. The lead/lag of 4 years is arbitrary. Underlying all the statistical observations there are the national influences of the overall educational and economic policies. To these we may add the fact that the different states have different rates of growth of population and different age structures. Further, enrolment ratios represent gross investment in education, while the relevant magnitude is not investment. Thus a state with a higher proportion of educated persons in the labour force would need a higher enrolment ratio merely for replacement on account of retirements and deaths. Thus even equal enrolment ratios would imply different magnitudes of net investments in education. Finally, educational expenditure is only one of the source of growth and such simple correlations between educational indicators and economic indicators do not tell us much unless we standardize our data with reference to other relevant magnitude.
While the relationship between technical and vocational education and industrialization is fairly clear, the relationship between education and agriculture is rather intricate. Yet the problem is very important for India. Modernisation of traditional agriculture is as much dependent on human factor as on material inputs. One of the factors influencing the human factor is the level of literacy and formal education among the agricultural workers. Chaudhry (1969)\textsuperscript{22} has examined the relationship between education and productivity in Indian agriculture. Taking the 1961 Census data for the level of education of agricultural workers and a gross value of agricultural produce in each district, Chaudhry obtains a positive relationship between literacy and yield per workers, literacy and yield per acre, primary education and yield per worker and primary education and yield per acre. Thus he obtained associative relationship between education of farm workers and the level of agricultural productivity. However this does not throw any light on the causal links through which this works out. Literacy and education are expected to make the farmers more rational, more adaptive, and responsive to changes, more flexible and more innovative. Chaudhry tries to ascertain the causal link also. One of the indicators would be demand for modern inputs. Here also he finds education of farmers and the demand for fertilizers to be positively correlated. This result holds even when the availability of irrigation as a factor influencing the demand for fertilizers is eliminated. These results are quite suggestive and would indicate that investment in farmer’s literacy can be quite productive.

In another context, Mathur (1970)\textsuperscript{23} has provided an important methodological criticism of the studies of the above type. In the first place, according to him correlation
is not causation. High correlation between education and agricultural productivity may be indicative of richer farmers being able to afford more education along with other necessary inputs rather than higher education affecting agricultural productivity. Secondly, from a logical point of view, it is necessary to demonstrate a double relationship, namely, that where literacy prevails higher agricultural productivity is necessarily observed and where literacy is absent, higher productivity is also absent. Thirdly, it is not clear whether formal education is either necessary or the best arrangement for obtaining higher agricultural yields. The same results might as well be obtained by better extension services among the adult farmers. Fourthly, he draws attention to the urban bias of education and the fact that educated village youth may be more prone to migrate rather than stay in the village and raise agricultural productivity. Finally according to Mathur, “the correlation has to be between education as a prime mover and the growth of investment, rather than education as the resultant following the income generated from investment”. In general, he is skeptical of the impact of formal primary education on agricultural productivity.

On the other hand, Sen (1971) is more hopeful in his Lal Bahadur Shastri Memorical Lectures. In this context, he makes three important observations. In the first place, a broader view of utility of education should be taken. The important point is, not just that more education may be more productivity in agriculture but that when other inputs such as fertilizers and seeds are undergoing a qualitative change, the utility of education may be very great indeed. Thus looking at education given other inputs and looking at education when concurrent changes are occurring in other inputs, are two
different things. Secondly, for rural societies an assumption of purely individualistic behaviour would not work. According to Sen, “The entire organization of rural society and economy is such that on a variety of matters, including the use of modern inputs and new varieties of seeds, communication between different members of the same village or community is extensive and the influence on one another is great. Therefore the right units for study are not families but communities, classes or villages”. Finally, education may indirectly facilitate social, political and institutional changes, which may be conducive to economic development.

Before leaving this sub-section we may take up Patel’s (1965) study for discussion. Patel finds that the educational distance between nations is much narrower than the economic distance. The 19th century educational landscape in the advanced countries of today would correspond to the educational situation prevailing in the underdeveloped countries today. The correspondence is for illiteracy ratios in early part of the 19th century; for primary school enrolment ratios in the last quarter of the 19th century and for secondary and higher education towards end of the 19th century or the beginning of the 20th century. The present day advanced countries have accomplished their educational transition within a short span of 40 to 80 years. The educational distance between the advanced and developing countries is narrower for the primary education but goes on widening for the secondary and higher education. According to him a faster development of the higher stages of education constitutes an important element in educational planning in the developed countries. In the developed countries taken as a whole the growth of higher stages of education was two to three times more
rapid than economic growth. Two comments on this study are called for. First, as the
author himself recognizes in a footnote, the proper comparison is between the stock of
educated persons rather than the enrolment ratios. Secondly, if the objective is to cover
up the educational distance per se author's recommendation of a faster growth of higher
stages of education is valid. But if the objective is primarily economic development,
somewhat more detailed examination of the relative roles of primary, secondary and
higher stages of education is needed.

Now we shall try to study the relationship between the economic development
and educational development for some selected countries.

There is a significant difference in per capita income and literacy of the advanced
countries as compared to India. There is a close direct co-relation between educational
development and per capita income.

Bowman and Anderson (1950)\textsuperscript{26} compared the literacy rate with per capita
incomes of 83 countries and their tabulated data is given below.

Table No.2.1. Distribution of sample - 1950

<table>
<thead>
<tr>
<th>Classification</th>
<th>Literacy Level</th>
<th>GNP (Dollar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>32 poor countries</td>
<td>Below 40%</td>
<td>Under 300</td>
</tr>
<tr>
<td>24 Rich countries</td>
<td>Above 70%</td>
<td>Above 100</td>
</tr>
<tr>
<td>27 Middle Level</td>
<td>40 to 69%</td>
<td>Not very definite</td>
</tr>
</tbody>
</table>

The obvious inference is that 40% literacy is the absolute minimum to cross the
economic barrier. They also found that literacy followed the industrial revolution in
England. Whereas in developing countries literacy is instrumental for industrial revolution.

Dension 1929 to 1957 was also interested in finding out of the impact of educational qualification on the salary of workers in the original sector. He found in the long run, mean education qualification were steadily rising. In 1910 only 5.9 per cent of the workers studied upto 12th standard in 1960 it rose to 21.2 per cent Salary increase was more than proportionate to the additional duration of the study.

Table No.2.2 Correlation between Educational qualification and Salary – 1957

<table>
<thead>
<tr>
<th>Educational qualification</th>
<th>Monthly Income In Dollars</th>
<th>Differential In Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>No education</td>
<td>50</td>
<td>-</td>
</tr>
<tr>
<td>Upto IV Std</td>
<td>65</td>
<td>+15</td>
</tr>
<tr>
<td>Upto VII Std</td>
<td>100</td>
<td>+35</td>
</tr>
<tr>
<td>Upto XII Std</td>
<td>140</td>
<td>+40</td>
</tr>
<tr>
<td>Upto X Std</td>
<td>235</td>
<td>+45</td>
</tr>
</tbody>
</table>

From the above Table, it is clearly evident that higher the education, higher is the income and vice-versa.

M.C.Clelland’s Model (1966) gave a model for integrating education with economic development. He selected 8 countries and collected economic and educational data. He adopted a novel method to classify countries on the basis of consumption of electricity from 1952 to 1958. Electricity is a symbol of gross and as it cannot be shared
it is deal for accounting purpose. His inference was that the economic growth over the year 1952-58 was influenced by the amount of secondary education in 1930. He developed the concept of educational stock and recommended a minimum of matriculation level and two graduates for a population of one thousand.

Table No.2.3. Level of Education and Annual Income in India (1970-71)

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Income per annum or month before tax in Rs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No formal education</td>
<td>2,900</td>
</tr>
<tr>
<td>Upto Primary education</td>
<td>3,100</td>
</tr>
<tr>
<td>Upto Secondary education</td>
<td>3,500</td>
</tr>
<tr>
<td>Upto Higher education</td>
<td>5,500</td>
</tr>
<tr>
<td>Graduates and above</td>
<td>8,200</td>
</tr>
</tbody>
</table>

Here Panchamuki (1970-71)²⁹ worked out the mean income of salary earners in Bombay city which is given in the Table 2.3 and shown in Figure 21. Panchamukhi’s study also supports the hypothesis that higher the education, higher is the income and vice-versa.

In another study covering the period of 1961 by Blaug and Nall Goundan (1978)³⁰ analysed the age earning profile that means earnings depends upon a persons age, educational qualifications and experience. Age earning profiles compiled on cross sectional data, earning for different categories are worked out by many countries and several National sample surveys had attempted to generate data regarding age qualification and earnings specifically.

Age earning profiles Indicates
1. There is rise in earning upto the middle forties and than slow decline.
2. People with higher or special qualification are given a better salary start
3. Maximum earnings are reached by people with higher qualification in the later phase of their career and terminal benefits are higher for this group.
4. There is possible to find positive correlation between educational level and salary in the organised sector.
Table 2.4 Education

<table>
<thead>
<tr>
<th>Economy</th>
<th>% of GNP</th>
<th>Ratio % of relevant age group</th>
<th>Percentage of cohort reaching grade 5</th>
<th>Expected years of schooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>5.5</td>
<td>5.4</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Denmark</td>
<td>6.7</td>
<td>8.1</td>
<td>96</td>
<td>100</td>
</tr>
<tr>
<td>India</td>
<td>3.0</td>
<td>3.2</td>
<td>65</td>
<td>77</td>
</tr>
<tr>
<td>Japan</td>
<td>5.8</td>
<td>3.6</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Norvay</td>
<td>6.5</td>
<td>7.4</td>
<td>99</td>
<td>100</td>
</tr>
<tr>
<td>UK</td>
<td>5.6</td>
<td>5.3</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>USA</td>
<td>6.7</td>
<td>5.4</td>
<td>90</td>
<td>100</td>
</tr>
</tbody>
</table>


From Table 2.4 it is evident that the advanced countries like Australia, Denmark, Japan, Norvay, UK, USA have high per capita income and also high literacy rates, whereas India, an underdeveloped country has low per capita income and also low literacy rates. There is a vicious circle of population, poverty and illiteracy. Unless we take timely and effective action the future of our country will not be bright31.

2.4. Human Capital Formation

There are natural resources in the form of ocean resources and mineral resources. Man himself is a precious resource and the development of this resource has facilitated the harnessing of other resource. The human being is like uncut diamond, to make it a gem, lot of education and training is necessary. Human resources development is the process of increasing the knowledge, the skills and the capacities of all the people in a society (Harbison and Myore)32.
The human being as such is not a resource it becomes a resource only if it is trained, developed and allocated to productive work according to Peter Drucker. Acquired and useful knowledge and skills in all individuals may be termed as human capital. Good education is an important means to produce material wealth. The most valuable of all capital is that invested in man. Human capital can be developed through education, job training, medical facilities, public health, nutrition, housing and social services. Improvement of human capital leads to qualitative growth of manpower. In the present circumstances educated, healthy and skilled population is certainly a capital for any country. But Mill, J.S. questioned the very concept and said wealth existed for the people and people should not be considered as wealth. Schultz considered high level manpower as human capital.

2.5 Process of Human Resources Development

The following are the stage in the process of human resource development.
1. Providing opportunities to children to acquire and sharpen the capabilities needed for their present and future lives.
2. Helping them to discover their capabilities and inner potentialities and use them for their personal and social benefits.
3. Promoting an institutional culture which will emphasis co-operation and team work motivation. Positive attitudes to the world of work in equalisation of society.

Reisman's model for human resources development for developing countries is as follows.
1. Minimum educational qualifications and job training are adequate for entry level positions.

2. Providing employees on the job training, higher education and work side course to enable them to get higher education and better skills.

3. Course mobility should be assured for person who can shoulder, higher responsibilities.

4. Part-time course (summer course including) should be integrated with job experience and employees should be able to get diplomas and degrees.

2.6 Indicators of Human Resources Development:

Harbisons and Myore\(^{35}\) collected data regarding the indicators of Human Resources Development.

A. Education:

1. Number of teacher (first and second level) for 10,000 population.

2. Engineering and scientists per 10,000 population.

3. Physicians and dentists per 10,000 population.

4. Pupil enrolled at first level (primary) education as percentage of the estimated population on that age group.

5. Pupils enrolled at second level as a percentage of the adjusted for length of schooling.

6. Enrolment in the third level education as percentage in that age group.

B. Economy

2. Percentage of pupil’s activities involved in agriculture and related occupations, strategies for human resources development for countries under level I (undeveloped)
   a. Gradually replace foreign workers by local talents from the lower levels.
   b. Utilise the service of foreign firms in training local person in high technology.
   c. Salary for such apprentices may be lower than that of foreign experts.
   d. Expansion of secondary education should be given priority over universal primary and higher education.
   e. Concentration of vocational or craft education at secondary stage may be unwise and costly.

2.7 Life Cycle of Human Capital

The growth and decline of human capital may be summarised into three categories.

Stage – I  Gestation period

In the first two decades of human capital formation, concentration will be on health, schooling and education in the wider sense. At this stage, educational opportunities differ among the regions.

Stage – II  Productive period

The next three decades will be used in capital production due to education and technology. Productivity analysis and cost-benefit analysis show rising trends in production and human welfare.

Stage – III  Survival period

From the sixth decade until death there is no productivity by human capital except in the rare cases.
Salient Features of Human Capital:

1. Human capital has longer gestation period than non-human capital.
2. Human capital is part of the individual and cannot be sold, mortaged or transferred.
3. Human capital appreciates in value up to a particular point of time.
4. No two units of human capital are similar.
5. Marginal returns may vary between persons with the same qualifications.
6. Human capital has non-economic attributes also.
7. Human capital is mobile and subject to salary and status.
8. Depreciation of human capital is difficult to calculate. Productivity of the human capital is influenced by the social and cultural environment.

Human Capital Depreciation:

The state of world's children 1990 a UNICEF document warns, investment in human capital in the form of nutrition, basic education and health cannot be postponed. It either takes place at an appropriate age when need is present or it does not. For the young child, there is no second chance. The unemphasised tragedy of the disinvestment in human capital in the eighties will be carried forward in stunted bodies and deficient education well into the twenty-first century.

Education as Investment:

According to J.K. Galbrith, dollar or a rupee invested in the education of human beings will often bring a greater increase in national income than a dollar or rupee devoted to railways, dams, machines or other tangible goods. In the process of human being becoming more productive, educating the people requires a lot of money. But
economists prefer to call it not as expenditure, but as investment. Adequate investment in education is reflected in the economic growth of countries. P.R. Panchamukhi and A.M. Nalla Goundan have estimated investment in educational capital in India. Both the estimates emphasize the fact that investment in educational capital formation is much lower in India as compared with that in developed countries. And also said physical capital formation has proceeded at the faster rate than investment in educational capital formation.

**Returns on Human Capital:**

Various studies have been made in recent years about the rate return on education in India. Mark Blaug, R.R.G. Layard and H. Woodhall in their study, causes of Educated Unemployment and ability factors.

**Table No. 2.5. Return of Return to Educational Cost (1960)**

<table>
<thead>
<tr>
<th>Educational Category</th>
<th>Grade</th>
<th>Per cent of cost Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Social</td>
<td>Private</td>
</tr>
<tr>
<td>Primary over illiterate</td>
<td>20.2</td>
<td>24.7</td>
</tr>
<tr>
<td>Middle over primary</td>
<td>17.4</td>
<td>20.0</td>
</tr>
<tr>
<td>Matric over middle</td>
<td>16.1</td>
<td>18.4</td>
</tr>
<tr>
<td>First degree over matric</td>
<td>12.7</td>
<td>14.3</td>
</tr>
<tr>
<td>Engineering over matric</td>
<td>16.0</td>
<td>21.2</td>
</tr>
</tbody>
</table>

Findings by Mark Blaug and others support the conclusion that the rate of return both social and private is maximum in case of primary education as compared to the
higher levels of education. Hence it is suggested for the Government that more importance should be given to the primary education rather than higher education.  

2.8 Conclusion:

The growth and development of a nation necessarily depends upon the quality of education. The huge amount spent on education must be effectively utilised to bring about desirable change in the behaviour of children.

Hence, Harbison points out that the basic problem in most of the under developed countries is not of poverty of natural resources but lot of under development of their human resources. Inspite of constant attention the problem of drop out remains serious all over the world. Drop-outs or wastage means the child leaves the school at any stage before the completion of primary education. This results in wastage of money, energy and time of both the government and parents. Towards this problem, the investigator wished to make and humble attempt to identify the root causes of the phenomenon of drop outs specially in rural areas.

There is a close relationship between the economic development and educational development. Advanced countries like USA, Japan, USSR, etc. have high per capita income and they have higher literacy rate. But in under developed countries, the per capita income is also low and the literacy rates are also low. Moreover, individual earnings are also positively linked with the educational qualifications. Some studies have effectively proved this fact.

In the modern days, economists consider the trained, educated and healthy people as human capital. Investment in education and health is investment in the human
resource development. Many studies have pointed out that investment in education yields greater returns as compared to the investment in any other real sector of the economy. Separately, the most important policy suggestion to the Government is that investment in primary education is more beneficial as compared to secondary or higher education. This has been effectively proved by several studies with the help of cost benefit analysis. Hence it is necessary for the government and parents to give more importance to the education of their children because they are the future citizens of the country.

References:

5. Ibid, pp.65-70.
8. Ibid, pp.65-70.
15. Ibid, pp.36-46.
17. Ibid, pp.36-46.


34. Ibid, pp.16-20.


40. Ibid, pp.201-203.