Chapter IV
Summary and Conclusions
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SUMMARY AND CONCLUSION

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. Human beings are included in Irving Fishers definition of capital. Capital, he asserted is a “useful appropriated material object” and since human beings have these characteristic, consistency required that they are included in the concept of capital.

For the economic development of the country material capital as well as human capital are required. Human capital is a concept that includes investment made in man through various means such as education and health.

Health is an essential and important form of investment in human capital because it enhances the productivity and efficiency of

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formation was a primary concern. Later the contribution that human capital makes to development came to be emphasized. The role of human capital was especially clear in the experience of the East Asian economies. They invested heavily in education and skills. Accumulation of human capital emerges from all this work as one of the most powerful engines of development. The other major component of human capital is education. Harbison has pointed out that the quality of human resource affect capital absorptive capacity of the country and it is education that determines and enhances this quality. Similarly Johnson has emphasized that labour forces equipped with technical skills are more important for economic development. Education strengthens peoples ability to meet their wants and those of their family members by increasing their productivity, and their potential to achieve a higher standard of living. An increase in formal schooling accounts for most of the literacy gains in the developing world in the past three decades.

Education promotes economic growth and thus puts other goals of development within reach.


3. Ibid. pp. 56-57.
Education affects productivity and growth through several channels. A better educated person absorbs new information faster and applies unfamiliar inputs and new processes more effectively. In the dynamic and uncertain environment of technological change more highly educated workers have a big advantage. In Thailand, farmers with four years of schooling were three times more likely to use new chemical inputs than farmers with one to three years of schooling.  

Japans rapid industrialization after Meiji restoration was fuelled by its aggressive accumulation of technical skills which in turn was based on its already high level of literacy and a strong commitment to education especially training of engineers.  

Koreas relatively strong base of human capital in early 1960's speeded its own industrialization. This accumulation started during the period 1910-45 with substantial on the job training and foreign technical assistance. Entrepreneurial ability which is so important for economic development has been characterized as a combination of moderate risk-taking, individual responsibility, long range planning and organizational ability.  

5. Ibid.
Skilled, healthy and well educated people are generally more likely to find employment and earn better wages. They have better access to information. The educated can also contribute more to the advancement of culture, Politics, Science and technology. They are more valuable to society.

The correlation between educational activity and human resource development has been empirically demonstrated by scholars like John Vaizey, Mark Blaug, T.W. Schultz. But such studies have not been conducted on the educational scene in India. It has been identified that well planned system of higher education is a major variable for providing the stock of manpower in diversified areas to accelerate the pace of industrialization. The relationship between education and employment is very significant. The growth and development of education is interlinked with employment and work. The demand for education in the public sector has been more in the professional and technical areas requiring higher education.

The enormous superiority of the developed countries in the field of knowledge derives as much from the quality of education as their scale of expenditure on education. It is this aspect which is neglected in developing countries.
Education has tended to be given comparatively lower priority in the matter of sectoral allocation of resources in these countries. Allocation for education cannot be wholly treated either as investment outlay or as consumption outlay. Gestation period for investment in education to yield results is too long. Difficulties are encountered in accurately estimating or quantifying the returns on investments in education. The reason is that the functional relationship between inputs and outputs in education is indeterminate. The net result is that in India also as in other developing economies education is treated as social service sector and often gets for itself only residual resources after allocation to the so called productive sectors.6

If we study the pattern of investment in education in underdevelop countries, then we find that in Asian countries (except Japan) high priority is assigned to primary education.

Primary education is mostly free and compulsory. Secondary education receives a lower priority. The need for technical education is recognised but enough resources are not diverted for this purpose. University education is expanding but does not provide sufficient top

level people to speed up economic development.

The public expenditure in education is low in many of the Asian countries. Malaysia spends the highest, 5.5% of its Gross National Product is spent on education in 1990. Indonesia's expenditure was 0.9% of its Gross National Product in 1988, whereas Afghanistan spent merely 2% of its Gross National Product for education in 1980.

Table 4.1

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Expend on edu.as % of GNP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>1988</td>
<td>0.9</td>
</tr>
<tr>
<td>India</td>
<td>1987</td>
<td>3.2</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>1980</td>
<td>2.0</td>
</tr>
<tr>
<td>Pakistan</td>
<td>1987</td>
<td>3.4</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>1989</td>
<td>2.2</td>
</tr>
<tr>
<td>Thailand</td>
<td>1990</td>
<td>3.8</td>
</tr>
<tr>
<td>China</td>
<td>1990</td>
<td>3.0</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1990</td>
<td>5.5</td>
</tr>
<tr>
<td>Philipinnes</td>
<td>1990</td>
<td>3.0</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>1989</td>
<td>2.7</td>
</tr>
<tr>
<td>Singapore</td>
<td>1988</td>
<td>3.4</td>
</tr>
<tr>
<td>Rep. of Korea</td>
<td>1990</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Source: Statistical Yearbook 1992, UNESCO.
In comparison to many countries India spends much less on education in terms of the proportion of Gross National Product. In terms of percentage of Gross National Product invested in education India ranks 115th in the world. There are only a few countries in South Asia like Burma, Bangladesh and Afghanistan which spend a lesser proportion of their Gross National Product on education than India.

In view of the paucity of funds the expenditure on education has been at a very low level in developing countries such as India.

As per 1992 statistic, India's expenditure on education as a percentage of Gross National Product was just 3.2%. In times of economic crisis the financial axe invariably falls on education and other social service sectors. Budgetary allocations are still far below the actual requirements of the education system.

The Kothari Commission had suggested that 6% of national income be allocated to education. But the amount actually spent never exceeded more than 3%. This has resulted in shortages of teachers and technical personnel, poor and inadequate buildings and equipment, overcrowding of classrooms and existence of high percentage of illiteracy.
While there is acute problem of illiteracy the country is also producing a vast army of educated unemployed. The biggest drawback in our educational policy has been its failure to establish a relationship between education and other social, economic variable.

The 1986 National policy on education emphasized the need to promote “excellence”; the Ramamurti panel made a case for “quality of status” and work and employment orientation of education.

Educational planning and policy should be regarded as an integral part of development planning, though its scope and direction will be determined by the rate of growth, the kind of growth that we want. If the rate of growth so desired is 7% a year then it will demand a large number of administrators, educationalist, scientists, engineers than a rate of growth of say 3% a year. The capacity to transform within a limited period and to do it in an effective way depends on the supply of various types of educated professionals.

The length of education and choice of types of education has to be economically adjusted to the pattern of future production of the country.  

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We have examined in the foregoing pages the role education has played in the economic development of India during the period 1960-90. The contribution of education in national income is a crucial indicator of the role that education plays in economic development of the country. As far as education is concerned we have concentrated on higher education and tried to analyse how it is inter-linked with the increase in national income over the years.

The main limitation of the study is that the data used here are of secondary nature. We have also made important assumptions.

1. We have constructed the wagechart 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 have further assumed that there exists no unemployment in the economy so that students who were not studying would have got employment.

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

India has made good financial investment in creating sound
education infrastructure to stimulate the pace of development. This result has been most successful on the quantitative front with 196 universities in 1991-92; and 5058 college during the same period. But the qualitative front is not so bright.

India among the developing countries is swamped with excessive university enrolments in fields which are not related to the present stage of economic growth. For example around 40 percent of the total enrolment in higher education is in the field of arts, social sciences and humanities, the enrolment in the field of Medicine, Eng/tech. Law have been very low, between 3-4% only.

Our approach in opening colleges and university has been regional and political. Due to wide spread unemployment graduates and postgraduates take to jobs where only matriculates are needed. Political pressures make emphasis on quantity whereas the achievements of rapid economic growth makes it imperative to emphasize the quality of high level manpower for economic development.8

When we analyzed the stage-wise enrolment we find that position

of postgraduate and research segment of higher education has been strengthened but there has not been very rapid increase in its share in total enrolment. The share of undergraduates, has increased much more rapidly due to mushrooming of affiliated colleges.

While examining the faculty wise distribution it was revealed that though the economy has undergone structural changes, the structure of higher education has not kept pace with it. It is significant to note that 50 percent of educated unemployed are products of Faculty of Arts whereas vacancies in professional and technical colleges remain unfulfilled due to lack of suitable candidates. It is significant to note that the percentage change in enrolment and percentage change in Net National Product do not show any correlation. When we relate the Net National Product with percentage changes in technical skills then also we find that inspite of annual increase of more professionals, the Net National Product is not showing the same trend. In certain years the rate of change of Net National Product is low compared to preceeding years. This may be due to the fact that though the number of professionals constitute a part of national income, there are other factors which influences Net National Product.
To examine the role education plays in economic development of the country as expressed by its Net National Product, we have tried to estimate the cost of education as that would give us investments made in education.

One important cost of education is the earnings foregone. We have estimated this on the assumption that if these students were not studying they would have been employed and earning. It also means lost production because they would have been in labour market and adding to national income.

On the basis of monthly wages the foregone earnings have been estimated. We have multiplied the number of students at various stages of education with wages they would have earned if not studying to arrive at foregone earnings for that particular year.

The foregone earning of graduates was high at Rs.448.38 crores in 1990-91 due to high enrolment. The foregone earnings for postgraduate students is less due to lower enrolment than graduates and for research level it is even less.

The foregone earnings are one part of total cost, other being expenditure incurred on maintenance of staff, equipment, books and journals.
To the sum of foregone earnings we have added the above mentioned costs to arrive at total costs of higher education. When we analyze the total costs of higher education as percent of net national income then we observe that it has been very low in the Sixties but increased significantly over the year still 1970-71. There after it remained at 0.32% -0.34% of Net National Product in 1990-91.

Therefore the resource cost of higher education as percent of net national product is extremely low though it is very important for economic development.

The coefficient of correlation between growth in education and economic development has been computed. It reveals that high degree of correlation exists between growth in education and economic development. The enrolment is positively related to net national product. For all the three stages of studies coefficient of determination ($R^2$) is fairly very high, ($R^2 = 0.93$) which of course is expected as we have taken only one independent variable. The sign of the coefficient of Net National Product has come out to be positive and is statistically significant at 5% level of significance. This shows that enrolment is positively related to Net National Product.
The other significant result obtained is that the magnitude of the coefficient of Net National Product is the highest (27.02) for undergraduate level but then it declines to (2.99) for postgraduate and (0.39) for research level.

This also reveal that variations in enrolment number due to changes in Net national product is much more (27%) for undergraduate students and is quite low (3%) for postgraduate level students. The opening up of employment opportunities due to economic development may be one important reason for this phenomenon. As we find in the developed nations that number of people going in for research is quite low. A larger number of their students find employment soon after passing their school level examinations and therefore do not pursue higher education as we have it in India.

Most of the graduates in India enrol themselves in post graduate levels because they are unable to find employment and this tendency continues for research level also.

Limitations: Though this particular analysis is very limited in scope and give us a rough idea about the dependence of enrolment
number on Net national product because we know that the enrolment does not depend entirely on income levels.

But we could not include all those factors due to non availability of data. Secondly this relationship which we have obtained may be due to the time series data i.e. we might have obtained the spurious correlation between the two variables.

To identify this problem some advanced econometric techniques are required. But as we are not aware of that so we have not gone into that much detailed examination and simply tried to examine whether increased enrolment is related to increase in national income.

The two variables have indeed moved in the same direction over the years showing that education plays an important role in the economic development.

Thus the notion that manpower supply in developing economies is perfectly elastic does not imply that the supply of human capital is perfectly elastic. High level manpower is a resource whose supply can be increased only by investment for human resource development. Investment in human resource in narrower sense may convey expenditure an education and training; and this is so important when we want to correlate it with economic growth.