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**EDUCATION AND ECONOMIC GROWTH:
SOME LEADING ASPECTS**

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ABSTRACT

Education, the means to translate 'Demographic Dividend' into 'Developmental Dividend' is the most important and vital element for prosperity of a nation and its sustainable growth and development in future. Education in general and higher education in particular, which ensures availability of manpower of right quantity and quality for all activities including health and education has to be the equalizer in an otherwise efficiency driven market economy (Reddy. K.C.2001). Its externalities including the dynamic externalities of higher education are indeed immense and they have profound positive effects on economic growth (Tilak, 2005). Hence, this paper tries to analyse some vital links between education and economic growth.

Keywords: Development dividend, Higher education, Economic growth

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Introduction

The concept of education as 'engine of economic growth' is based on the new theory of economics that scientific creativity, skill and other qualitative factors of the labour force or the

manpower will contribute to the economic development no less than reproducible physical capital and labourforce. These factors, which had been paid little attention in the past are now called 'human abilities ' and the expenditure on the creation and promotion of human abilities is an investment for future. E.J. Hawkins has very aptly remarked, "production functions are in reality imposed by the laws of humanity and not of physics". Marshall (J 938) emphasized the importance of education as a national investment and in his views, the most valuable of all capital is the 'investment in human beings.' Sen's capability notion has also much to do with health, education and nutrition. Investment in these are that raises human capability, yields a return, as Paul Streeten (1981) argues, no less than the return from physical capital. Here It is worth mentioning that not only the studies in west has ascertained the role of education in economic development, but it has been established by the economic miracles in Asia too, visible not only in the rapid growth of Japan or China but also in the development of East Asian Tigers, namely South Korea, Taiwan. Hong Kong and Singapore as well as some newly emerging East - Asian economies such as Malaysia, Thailand, Indonesia, Vietnam and Philippines, who have proved that how an useful be played by education and skill formation even though most of these countries have paucity of natural resources. So far as the case of Indian economy is concerned, the modem brilliant thinking transcends, beyond revolutions (green revolution or white revolution or mechanical revolution) and looks aspirantly at 'Knowledge Society' Since it is powered by innovative capacity' (Kalam, APJ, 2006).

Therefore, an approach to investment in education must be based on an understanding that the general development of human abilities, which is essential to the economic development in future, depends upon both quantitative and qualitative development in education.

APPROACHES TO INVESTMENT IN EDUCATION

The socio-economic thinkers have viewed investment in education from different angles. Some of them have realized it as social investment whereas others as economic one and they have emphasized their priorities accordingly. However, in modern era, the economic consideration has become more predominant with the view that education affects efficiency and productivity of the entire system and progress or prosperity of a nation is basically the result of human efforts. The builders of economies are elites of various kinds who organize and lead the march towards progress. The effectiveness of the elites as prime movers depends not only on their own

development but on the capabilities of those whom they lead as. Thus in a sense, the real wealth of a country and its potential economic development stem from the power to develop and effectively utilize the innate capacities of people. The economists like Solow, Schultz, Denison and Todaro have calculated the benefits of Investment in education either in terms of input-output analysis or the relationships between expenditures on education and income or physical capital formation. According to Todaro education contributes to economic growth in the developed and developing economies in the following ways:

- (i) It helps in creating a more productive labour force and endowing it with increased knowledge and skills
- (ii) It helps in providing wide spread employment and income-earning opportunities for teachers, school and construction workers, text book and paper printers, school uniform manufacturers, etc.
- (iii) it helps in creating a class of educated leaders to fill vacancies left by departing expatriates or otherwise vacant positions in government services, public corporations, private businesses, and
- (iv) it helps in providing basic skills and encourages modern attitudes in the diverse segments of the population (Todaro, Michael P., 2003).

In order to calculate the benefits of education, economists have developed some approaches to investment in education also such as, (i) the simple correlation approach (ii) the direct returns to education approach (iii) the residual approach and (iv) the relationships between expenditure on education and income or physical capital formation approach, etc.

The simple correlation approach or inter-country correlations of school enrolment ratios and gross national product approach consists of correlating some overall index of educational activity with some index of the level of economic activity. The economists like Vennilson, Edding and Elvin have done major work in this field and have come to the conclusion that the poor economies are compelled to have less investment on education and consequently lower level of gainful employment and output. In their own words,....a country with a low Gross National product per-capita cannot afford to have most of its young people between 15 to 19 in full time

education and thus withheld from gainful employment. On the other hand, a highly industrialized country with a high 'Gross National Product' per capita can hardly afford to break off education as current consumption and the margin of income available to satisfy this demand is large.....”

Generally speaking, the income level as expressed by GNP per-capita seems to set a lower limit of educational effort. But above that level, there is a wide margin for choice, whether it be determined by private consumer preferences or by political decision to invest heavily in education in order to accelerate economic development.

The another approach i.e., the direct returns to education approach, an obvious and simple way of studying the economic consequences of education is by contrasting the life time earnings of people who have had 'more' education with the life time earnings of the people who have had less education. The criteria for this type of calculation is based either on the personal profit orientation or the national productivity orientation.

The personal profit orientation consists in looking at differences in the net earnings of people with varying amounts of education as evidences of the amount of personal financial gain that can be associated with the attainment of a given level of education; whereas the 'national productivity orientation' consists in looking at education related earnings differentials as partial evidence of the effects of education on the production or output of the country, and is based on the premise that in a market economy, differences in earnings reflect differences in productivity depending upon the quality of the manpower. This orientation is relevant to the question of whether society as a whole investing the right share of its resources in education or not?

There are several difficulties with these measures on returns from education, growing out of explicit or implicit assumptions, and earnings at different educational or age levels are not solely the result of formal education, but reflect on-the-Job training, experience, differences, in natural ability, family income, social status and other factors.

However, despite the debate between qualification and limitations of these estimates, the results obtained from several developed countries like U.S. and other do offer rather consistent support for the nation that education, on the average, has paid significant financial as well non-financial

reward and therefore, this approach also leads to the conclusion that expenditure on education and especially the quality education must be regarded as a good investment for future.

As regards the residual approach, in general terms, it consists of taking the total increase in economic output in a country over a given period of time, identifying as much of the total increase as possible with measurable inputs (capital and labour being the two measurable inputs usually chosen) and then saying that the residual is attributable to the unspecified inputs such as education and advances in knowledge, which are usually regarded as the most important of the unspecified inputs.

In the actual implementation of the residual approach a number of alternative techniques can be adopted. First it is possible to proceed by calculating an input series for the labour input (based for instance, on hours worked), a separate constant price, input series for the capital input and then combining these two input series into an overall arithmetic index of inputs (using the relative shares of labour and capital in the total GNP as weight). Next, the rate of increase in this aggregate input series is compared with the rate of increase in aggregate output series (also expressed in constant prices) and by simply subtracting it is possible to obtain a measure of the contribution of the third factor.

Robert M. Solow concentrated on determining this increase in Gross National Product due to increased use of capital with the remainder 'attributable to technical change'. Under the assumptions of a linear homogenous production and a neutral technical change which does not affect substitution between capital and labour, Solow thus computed a 'residual' equal to 87.5 per cent of increase in output per man hour in the United States between 1901 to 1949 (Solow, Robert M.) and despite several difficulties in this method of calculation it still holds good for studies regarding the impact of education and skill formation on the level of output and skill formation on the level of output and economic development.

The last but not the least approach in the series is the relationship between expenditure on education and income or physical capital formation. Theodore W. Schultz has analyzed this relationship in the U.S. for 1900 to 1956 and has shown that "the resources allocated to education rose about three and a half times (i) relative to consumer income to dollar, and (ii) relative to gross formation of capital in dollars.....".

In other words, the 'income elasticity' of the demand for education was about 3.5 over the period and alternatively, education was considered as 3.5 times more attractive than investment in physical capital. Schultz has also tried to measure the total stock of 'educational capital' at different points in time (Schultz T.W). By adding together the possible earned income forgone by those enrolled in schools, colleges and universities (that is the 'opportunity cost' of education) and the expenditure for formal education of all types (with allowance for depreciation) he calculated a figure for the total annual investment in education in U.S. by decades from 1900 to 1956. The total stock of 'educational capital' in the labour force of U.S. rose from \$ 63 billion in 1900 to \$180 billion in 1930 and \$ 353 billion in 1957 at 1956 constant prices. It is also significant that the ratio of stock of 'educational capital' to the stock of reproducible non-human wealth (physical capital) rose from 22 per cent in 1900 to 42 per cent in 1957.

Thus it appears that large number of economists have realized expenditure on education as economic investment since it promotes economic development though some others contend that it is a social investment and it should be determined residually. However, Charles A. Myers and Fredrick Harbison point out that "it is virtually impossible to calculate the rate of financial return on an educational project in the same manner as on a dam or factory because of difficulty of ascertaining how much is really consumption and how much represents investment". (Myers & Harbison)

But it must be realized that economic development of a country does not merely consist in building dams and factories and so forth. The progress or development is basically the result of human efforts. It takes human agents to exploit natural resources, to build dams and factories, to mobilize capital and to carry on business. The builders of economies as mentioned above are elites of various kinds who organize and lead the march towards progress. The effectiveness of the elites as prime movers depends not only on their own development but on the knowledge, skills and capabilities of those whom they lead as well and therefore, a sizeable proportion of investment must be directed towards development of education - both quantitatively and qualitatively.

However, in most of the countries including India, financial support to education, though greater than even before has failed to keep pace with the increased social demands upon education. It is perhaps, not unfair to say that political leaders and the general public almost everywhere are

somewhat 'schizophrenic' on the subject of education. They have high praise for the virtue of education, they rely heavily upon it to help the new generation solve great problems to which the old generation has found no solutions; but when it comes to spending more money for education, their deeds fail to match their words, (Phillip, 1960) and even today, they, especially in the developing countries spend a very little proportions of their Gross National Product (GNP) on education and thus, education, the catalyst of modernizing society' 'the key to the abundance of modern economy' (Schultz, 1968), which prepares the 'bed rock' for development of human capability, has not acquired is real share in the total investment of such economies. Hence, illiteracy and inadequate education at the higher level still retards growth as it constrains skill formation.

EDUCATION IN INDIA: OUTLAY AND ACHIEVEMENTS

In India, the expenditure education has seldom been approached as an investment in human resources rather it has been treated as social expenditure. No doubt, the social gains of education of elementary and secondary levels are more important, but at the level of higher and technical educations, the economic gains predominate.

The governments in India, both at the center and state levels, have been playing an important role In the quantitative and qualitative expansion of education and the share of investment in education in total outlay has always been increasing during the Five year plans. To quote Economic Survey of the Government of India, 2001-03; "Education IS a critical input of investment in human capita. Plan expenditure on education has also increased rapidly Since the First Five Year Plan. A high priority has been recorded to this sector in the Tenth Five Year Plan with on allocation of Rs. 43, 825 Crores as against Rs. 24,908.38 Crores made available in the Ninth Plan, representing an increase of 76 per cent" (Economic: Survey, 2002-03). However, the total expenditure has been around Rs. 0.54 lakh crores (at2006-07prices) during the Tenth Five Year Plan. The Eleventh Five Year Plan has proposed a massive increase in expenditure on education amounting to Rs. 2.37 lakh crores(at 2006-07 prices) as against Rs. 0.54 lakh crores during the Tenth Five Year Plan. The share of education in total plan outlay Will correspondingly increase from 77 per cent to 19,4 per cent. Around 50 per cent of Eleventh Plan

outlay is for elementary education and literacy, 20 per cent for secondary education and 30 per cent for higher education including technical education (Planning commission, 2007-12, Vol. II. p. 37).

Though it is a fact that expenditure on education in India has not seriously been considered as an investment in human resources and consequently, the share of expenditure on education as percentage of Gross Domestic Product (GDP) is still around 3.8 per cent (during 2002-05) as against the goal of 6 per cent of GDP for expenditure on education which is much lower in comparison to several other countries of the world. Among 124 countries of world in 2006, India ranked as low as ninety seventh in terms of the proportion of the public expenditure on education to GDP (UNDP, 2006). During the first three decades of planning, the proportion of public expenditure on education to GDP in India had almost stagnated but since mid-1980s it started to increase and now there has been some significant improvement but that too in the field of elementary education and as a matter of fact, expenditure on education is quite inadequate. However, due to increasing expenditure on education during subsequent Five Year Plans, educational facilities have been expanded at all levels in India and as a result, not only the literacy rate has risen but the percentage of children availing school education has also increased over the years. At present the country has abundant facilities for higher and technical as well as vocational education which is playing an important role in economic, scientific and technical and self-reliant growth of the economy by producing quality manpower. The enrolment of students in institutions of higher education was 75 million in 2002 which rose to 140 million in 2007. If we take an overall view of education achievements in absolute terms, they are quite impressive, but when we make the relative analysis, they appear still to be meager and inadequate.

So far as the literacy ratio is concerned, the national average increased to 65.38 per cent in 2001 as against only 16.67 per cent in 1951. In isolation this may look quite impressive, but the fact remains that even after more than 50 years of planned development in the country, 35 per cent of the population remained illiterate in 2001. In twelve states, literacy rates are lower than the national literacy rate and in Bihar it is only 47.53 per cent and the rate of female literacy is much lower at (33.57%) as against the national average of 52.1 per cent (census of India 2001). In comparison to several Asian countries also India's attainments in terms of literacy rate was 39

per cent in India in 2000-05, as against 9 per cent in China, 9 per cent in 'Sri Lanka, 7 per cent in Philippines and 3 per cent in Argentina. In all these countries female illiteracy rates are also substantially lower than that in India'. Most development economists now believe that the poor performance of India on the literacy front has affected its overall development performance.

The government has launched several schemes the SarvaShikshaAbhiyan being the most important among them, for universalization of education at the elementary level, the Gross Enrolment ratio, (GER) has gone up at 107.8 per cent at the primary level (I-V) and 69.9, per cent at upper primary level (VI-VII.), but a major problem at this level of education is the high drop-out ratio and the low rate of girls participations. Hence, for the realization of the goal of universalization of elementary education, the National Policy on Education has also stressed on retention, participation and achievement rather than more enrolment. Enrolment IS a necessary but not a sufficient condition for achieving this goal.

At the secondary and senior secondary levels, the gross enrolment ratio is only 39.91 per cent during 2000-05, whereas the dropout ratio IS as high as 62 per cent (Planning Commission, Eleventh Five year Plan). This shows that the spread Of secondary education In India is also quite limited. In recent Years, in order to make secondary education more meaningful for remunerative work without necessarily having to go in for higher education, a schemed of vocationalisation of secondary education was started in the seventh plan. For giving a new thrust to vocationalisation of secondary education, a centrally sponsored scheme was launched in Feb. 1998. Other important schemes include the schemes for improvement in science education, the open school system and encouragements to the deprived sections like children with rural background, girls and SCs/STs and revision of the curricula in order to make it more Job-oriented. In 2004-05, there were 152, 045 secondary and senior secondary schools in India.

The higher education system at present also suffers from several weaknesses, such as proliferation of substandard institutions, deterioration of academic standards, outdated curriculum, failure to maintain academic calendar and lack of adequate support for research. Moreover there are wide disparities, between rural and urban areas as well as male and female enrolment ratios. A part from these problems higher education IS highly subsidized which has put unnecessary financial burden on the government.

Further, technical education including management education is one of the most effective ways to create skilled manpower required for developmental purposes. During the last five decades there has been a spectacular expansion of technical education in the country. In the year 2005-06 there were 1969 recognized technical education institutions at the first degree level and more than 2475 post graduate institutions recognized by All India Council for Technical Education. There were seven IITs providing top quality personnel of world level as well as a large number of IITs, RITs, engineering colleges, research institutes, Six Indian Institutes of Management as well as other institutes offering the MBA, MCA, Information Technology and other such course'. The Indian Institutes of Management with their high quality products are assisting private and public enterprises in meeting their needs for managerial manpower through Post-graduate programmes. In addition, 990 approved Management Institutes in part MBA courses in both general and functional area of management.

But the area of technical education at present, various imbalances and distortions exist. Over the years, quantitative expansion of technical education has lowered the standards and now there is a structural imbalance in skill requirement of the business sector and the traditional curriculum followed by the engineering and management institutions. The infrastructural facilities available in most of these institutions are inadequate and yet there has been enormous increase in public expenditure on technical education.

Therefore, there is a need of modernization and up-gradation of infrastructural facilities, quality improvement in technical and management education and the strategy for raising non-budgetary resources.

Besides, the Indian educational system suffers from several other problems like the unplanned growth of higher education, poor quality of education in several institutions and high percentage of failure and drop outs, the tendency of highly qualified person to go abroad for earning a lot and make contributions to the development of other countries, a large number of educated unemployed and under employed people who represent the wastage resources, as well as the disparities in the standards and awareness of rural and urban, male and female education. Inadequacy of teachers, lack of infrastructural facilities and teaching aids, dull teaching method, overcrowded class rooms and poor pupil achievements, etc. are the other problems which all result in discouragement effect (Dreze and Sen, 2006).

THE WAY-OUT: HOW TO IMPROVE THE EDUCATIONAL SYSTEM

If education has to raise the quality of human resources and make desirable contribution for economic development of the country, following changes are to be made in the educational system of the economy.

First of all, some restrictions must be imposed on the quality of university education and admission to post-graduate courses should be allowed only for those who satisfy its norms and requirements. The substandard and unproductive research work, which involves public expenditure, should not be allowed as it involves a colossal waste of resources for making research both meaningful and productive, emphasis should be on quality and not on quantity.

Secondly, education should be made job oriented. In other words, emphasis should be on vocational education rather than on general education.

Thirdly, technical education should be planned properly. Since it involves heavy cost, the government must ensure Jobs to all the technical hands. Further, if a person getting technical education at the state's expense wants to go abroad, the government must claim the money which it has spent on his education.

Fourthly, instead of opening new institutions of higher education, the government must try to raise the standards of education in the existing ones

Fifthly, education in science is costly and, therefore, its expansion should be planned carefully. There is no need of producing science graduates if they can get only the clerical jobs. For these jobs commerce and arts graduates will not be less competent while the cost of their education is comparatively much lower.

CONCLUSION :

In rural areas, emphasis should be on agriculture and vocational education. General education has been found less useful in these areas. For instance, the persons with higher education do not find themselves fit for agricultural activities and they migrate to cities in search of employment opportunities.

Further, at primary and secondary levels, the government must investigate the reasons behind the large number of dropouts and should make attempts to solve this problem. It has to make the efforts to overcome the discouragement effects as mentioned by Dreze and Sen (2006). Overcoming this effect depends crucially on improving the accessibility affordability and equality of schooling in India. According to Dreze and Sen, Much can be done without delay in this field by the steps like opening more schools, improving the Infrastructure, appointing more teachers, simplifying the curriculum, organizing enrolment drives, providing free text books and mid-day meals of reasonable quality etc. However the primary challenge would be to improve the teaching standards in the class rooms (Dreze and Sen, 2006).

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