EDUCATION AND ECONOMIC DEVELOPMENT

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Abstract: The purpose of this paper is to assess the contribution of education to growth and development of a country by analyzing the views of different economists and empirical studies. The paper also discusses the importance of investing on education or human capital and the cost of education or cost of acquiring skills. At the end, the paper assesses whether returns on investment in education increases with the increase in spending on education.

***Keywords*-Education, Economic growth, Investment, Cost, Returns.**

1. INTRODUCTION

There is a general consensus, borne out empirically and theoretically, that improvements in human capital contribute to economic growth. As per the World Bank, these improvements, both quantitative and qualitative, come about from education, on-the-job training and work experience. They have a huge impact on productivity in the labour market and on the economy as a whole.

Education refers to the development of human skills and knowledge of the people or labour force. It is not only the quantitative expansion of educational opportunities but also the qualitative improvement of the type of education which is imparted to the labour force that hold the key to economic development. Because of its significant contribution to economic development, education has been called as human capital and the expenditure on education of the people as investment in man or human capital. Speaking of the importance of education or human capital, Prof. Harbison writes, "Human resources constitute the ultimate basis of production, human beings are the active agents who accumulate capital, exploit natural resources, build social, economic and political organizations and carry forward national development. Clearly, a country which is unable to develop skills and knowledge of its people and to utilize them effectively in the national economy will be unable to develop anything else."

2. Education and Economic Growth

For a long time in Economics, it was thought that physical capital plays a crucial role in growth and development of a country. But in the last four decades economic research has revealed the importance of education as a crucial factor in economic development. According to Todaro and Smith, "Both health and education can also be seen as vital components growth and development as inputs to the aggregate production function. Their role as both inputs and output gives health and education their central importance in economic development."Gross domestic product of a country depends not only the amount of labour (work-hours) used for producing goods and services but also on its productivity. One of the important factors that determines productivity of worker is human capital, that is education. According to Prof. Amartya Sen, "The improvement in the availability and quality of education results in higher level of functioning and capability of labour."He has shown in his works that for a country a low level of education lowers the growth of GDP due to shortage of appropriate skills. Besides, the empirical evidence available suggests that countries which have invested more in education as measured by average years of schooling tend to experience, other things remaining constant, higher rate of growth.

Empirical estimation of the contribution of education to economic growth dates back to 1957 when Robert Solow published his seminal work in The Review of Economics and Statistics. Solows's aim was to estimate the contribution of labour, capital and technological change to economic growth in the United States over the period 1909-1949 using the production function approach. He estimated that for United States between 1909 -1949, 57.5 percent of the growth in output per man-hour could be attributed to the residual factor which represents the effect of the technological change and of the improvement in the quality of labour mainly as a consequence of education. He estimated this residual factor determining the increase in the total output on account of measurable inputs of capital and labour (man-hours). He then subtracted this figure from the total output to get the contribution of residual factor which represented the effect of education and technological change, the physically immeasurable factors. The value of residual, known as total factor productivity (TFP) in Solow's model, was excessively large (57.5) and this drew the attention of many economists to the problem of analyzing the effect of technological change.

Barro (1997) in his study suggested that one extra year of education raises the growth rate by 1.2% per annum. In fact he suggests a total impact of education on growth of even more than this, because in his framework countries with low incomes per capita tend to catch-up with those with high incomes. The rate of catch-up depends positively on the number of years of education, reflecting the view that a high level of education makes it easier to absorb best-practice technology. Denison (1962), another American economist, made further refinement in estimating the contribution to economic growth of various factors. Denison adopted the conventional method of decomposing the growth of output into the growth of an array of production inputs

(labour, capital and land) together with the growth in total factor productivity for the United States for the period of 1909-1957. For labour inputs, Denison took into account education, the gender and age composition of the labour force. For capital inputs, Denison took into account change in the stock of capital composition by economic sector and foreign trade. His evidence demonstrated that education has a significant impact on the quality of labour, thereby affecting long-run economic growth. That is, as more educated people enter the labour force, the average level of educational attainment of the workforce increases and the more able is this workforce to implement technological advances.

The contribution of education to economic growth has also been the focus of new growth theory which emerged in the 1980s. Two of the architects of this theory are Romer and Lucas. Romer (1986) argued that investing in education, training and research and other forms of human capital may help overcome the problem of diminishing returns and thus assist in achieving long-run growth. He further asserts that the acquisition of human knowledge, which has increasing marginal productivity, should be included as a part of factor inputs for production. His model, based on the analysis of the of research and development (R&D) in long-run economic growth , placed emphasis on incentives to generate new ideas by firms. According to Temple (2000), Romer's framework opens up the possibility that even a one-off increase in the stock of human capital will raise the growth rate indefinitely. Lucas (1988) argued that the level of output is the function of the stock of human capital, where human capital refers to the knowledge obtained through education, rather than skills. In other words, the Lucas model is based on knowledge accumulation as in the Romer's model, but in a more direct way. His model made it possible to take into account the policy interventions and nature of institutions that influence the long-run economic growth rate.

Temple (2001) mentioned that there are three reasons why the model of new growth theory is s important. First, it highlights education as a central determinant of economic growth. Second, it shows that even a laissez-faire approach to the acquisition of human capital can stimulate growth. Finally, it exposes opportunities for policymakers to target growth by subsidizing education and by providing tax and other incentives to private firm for the research and development (R&D) expenditure. These are the arguments used by third world countries and their sponsors (IMF and World Bank) to use donated and cheap loan funds to increase participation in education as the first step towards economic independence.

3.INVESTMENT AND EDUCATION

According to Stiglitz, "Spending more on education today (reducing consumption) raises future income but each additional investment in education provides a smaller and smaller return."Therefore, like physical capital, expenditure on education also represent investment in capital which raises productivity in the future. Besides investment in education is tied to specific human being and therefore it is called human capital. According to Mankiw, "Like all form of capital, education represents an expenditure of resources at one point in time to raise productivity in the future. But unlike investment in education is tied to a specific person and this linkage is what makes it human capital."The difference in wages between those with more education and those with less education are quite large and have been increasing. For example, "college graduates in the United States earn about twice as much as those workers who end their education with a high school diploma."According to Stiglitz, "The difference in earnings between workers with more capital and those with less human capital on an average tends to be even larger in developing countries where educated workers are in scarce supply."

Cost of Education- Investment in education or human capital has a cost. Economists are generally concerned with the opportunity cost of time spent in acquiring education. A person spending his time in acquiring education sacrifices income or wages which he could have earned by working during the time he spends for acquiring education.

Return on investment in education-It is the apparent importance of education in the historical growth process of developed countries that has invoked the response that investment in human capital may be as important as investment in physical capital in developing countries. The empirical evidence seems to support this. In 1980 a World Bank survey concluded that studies have shown that economic return on investment in education in education seem, in most instances, to exceed returns on alternative kinds of investment, and that developing countries often have returns than the developed ones."An important study based on available statistical data of both developing and developed countries made by George Psacharopolous found that in the early 1990s private returns on primary, secondary and higher education were higher in developing countries of sub-Saharan Africa, Asia and Latin America than the developed countries. There were several interesting and important conclusions of this study. First, the study suggested that the highest rate of return comes from investment in primary education. This is consistent with the observation that one of the strongest associations in developing countries is between the level and rate of growth of per capita income and the proportion of the population in primary education. The study further suggested that the rate of return on education at all levels tends to decline with the level of development, as measured by per capita income. Since enrolment rates tend to be higher in developed countries than in developing countries, this suggests diminishing returns from expenditure on education at all levels. The study also suggested that the social return is invariably lower than the private return. This is because the costs of education, especially at the primary and secondary level, are not borne by the individual but by the state. Overall, it can be concluded that investment in education in all countries, is both privately and socially profitable.

4. CONCLUSION

Economists are of the view that it is the lack of investment in human capital that has been responsible for the slow growth of less developed countries. A number of studies revealed that one of the important factors responsible for the rapid growth of the American economy has been the relatively increasing outlays on education. But it needs to be said that the fact that the capacity of country to absorb physical capital and technological progress may be constrained by the availability of human capital does not necessarily mean it should be given preferential treatment. All types of capital formation need to be considered together and

carried out simultaneously. Ultimately, the amount of resources devoted to investment in human capital is an allocative problem that each country must decide for itself on the basis of a number of considerations, of which the rate of return would be one. Other important considerations that would be the type of educated workforce that might be required in the future to avoid skill bottlenecks on the one hand and unemployment on the other, if the pattern of demand and the balance between genders is changing.

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