



ECONOMICS OF HUMAN CAPITAL IN INDIA

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Introduction

Economics of human capital as an area of research is at least 45 years old. Though the idea of human capital finds its origins to Adam Smith and Johann von Thunen of the 18th and 19th centuries respectively and was more clearly pronounced in the early part of 20th century by John Walsh and Irving Fisher, who even used the concept of *specialized* human capitals to refer to skilled and higher educated individuals, Economic of Human capital, and more clearly Economics of Education was born as a formal area of study only four and a half decades ago with the presidential Address by Theodore W. Schultz (1961) to the American Economic Association in 1960 on 'Investment in Human Capital'. The human capital theory was a great contribution to Economics and it created 'the human investment revolution in economic thought' as aptly described by Mary Jean Bowman (1966). The very concept Capital had to undergo a serious change, with the emergence of human capital. Further, it is being realised that the concept of human capital has a profound interface with the newly emerging principles and theories of 'Social capital', which in a sense is built on the concept of human capital to some extent.

In about five years after the formal birth of Economics of Human Capital, the Indian Economic Association had organised in its annual conference in 1965 in Banaras a special session on 'Investment in Human Resources', and could discuss the theme under as many as six major heads that include the concept of human capital, measurement of costs and benefits of education, efficiency of expenditure, rates of returns and criteria for investment, and so on. A report of the conference was prepared by V.N Kothari (1966a). Today when I attempt to review the area of Economics of Education in India, I recall the significant contributions of V.N Kothari among several others and pay respect especially to professor Kothari, who passed away last December.

According to the human capital theory, expenditures on schooling, health, training, migration etc., constitute investment in human beings, which enhance the capabilities of the people as producers and consumers in the labour market, in the households and in the society at large. Of all, education and health are considered as the two most important components of human capital, and the concepts of educational capital and 'health capital' (Michael Grossman, 1972) evolved. There are several similarities between educational capital and health capital, both being essentially embedded in human beings, but there are also several important differences. While expenditure on education improves skills and productivity of individuals, expenditure on health and medical services results in promoting reduction in death rates of birth rates and "primarily affect the numbers and secondarily the skills, capabilities and efficiency" (Kothari, 1966a, p. ix).

Economics of Education

Beginning with the pioneering works of Theodore Schultz, Gary Becker, Jacob Mincer, and Edward Denison, Economics of Education has traveled a long distance during the last four and half decades. There has been a steady and rather a fast growth of the areas. From the 'first generation' research of the heydays of the 1960s, reaching the peak in 1970, and the second generation studies of the 1970s and the 1980s, the area grew in strength decades after decade, not only in terms of empirical applications, but also going deep into the various facets of basic tenets of Economics of Education in the 1990s and in the subsequent years. Economics of Education has drawn for its own development heavily from Economics, and in turn influenced heavily the development of Economics and also the fast promising area of Development Studies. Economics of Education also broadened the scope of economic planning. The contributions in Economics of Education during the last four and a half decades opened up new vistas in, and have influenced considerably and even expanded the boundaries of the theories of growth, labour market economics, public finance and development economics. Economics of Education also entered the theories of social choice as well and even Welfare Economics. Further, it became an important area in public policy studies, as public policy everywhere is considerably influenced today by research in Economics of Education. Overall, the research conducted in the area of Economics of Education has been very rich, most diverse and vibrant. It covered three broad areas: (a) education-development relationships, (b) educational production function, and (c) financing of education. Studies on education-development relationships examined the contribution of education to development and the effect of development on education, the two way relationship. They were based on the rate of return analysis, simple correlations, production functions estimating residual and the coefficient of education, and simultaneously equations. Studies also included estimation of demand functions, and analysis of determinants of participations of children in schooling. Studies on education production function further analysed various aspects relating to internal efficiency in education. And studies on financing of education covered principles of allocation of resources, mobilisation of resources, public versus private finances,



household investment in education, costs of education, etc. In a short time, Economics of Education has become a specialized branch of Economics and also a separate area of Educational studies.

Starting modestly as a residual factor in economic growth in the 1950s and in the early 1960s (Zvi Griliches, Denison and others), human capital, more specifically education, became one of the most important factors in the theories of growth. As Blaug (1985, p. 17) remarked, the 1960s represented the golden years of the Economics of Education with research on a variety of economic dimensions of education, and serious debates on conceptual, philosophical and methodological issues. The three major approaches to economics of the educational planning, viz., rate of return analysis, manpower planning, and social demand analysis have occupied centre-stage of the research agenda in Economics of Education and also in all the policy and planning discussions on educational planning in developing countries as well as in Eastern and Western European countries, and have vastly contributed to better understanding of several economic dimensions of development. The area of economics of education received serious shocks in the early 1970s in the form of 'Screening', 'filtering' 'labelling' (Arrow, 1973; and Spence, 1973) and 'queue' (Thurow, 1975) theories, theories of labour market segmentation (Gordon, 1975), and the phenomenon of diploma disease (Ronald Dore, 1976) – all questioning the role of education in development. These are further fuelled by the rapid growth of graduate unemployment, and the setting up of inflationary trends in the developing countries and stagflation in advanced countries, on the empirical scene. Luckily, the human capital theory not only withstood the initial shocks, which were later described more aptly as 'hypotheses' (e.g., screening) and notions (of segmented labour markets), but also established itself as invincible, and there was a revival of faith in Economics of Education in the 1980s. By the end of 1980s, economics of education is back with all its firmness. But research of the second generation of the 1980s no more emphasized manpower planning or vocational education. It did include, however elaborate studies, including tracer studies on graduate unemployment in many countries (Sanyal, 1987). The research also advocated cautioned use of rate of return analysis, and qualified interpretation of the results. Socialization function of education has also become an important area of concern.

Recognising the flower-and-seed relationships between education and development from the very beginning of the 1960s, scholars have also examined the effect of economic growth on education. Methodologically the research on the relationship between education and development graduated from simple correlations to simultaneous equations and other highly sophisticated econometric methods. In fact, methodological sophistications have been very significant in the area. As a result, compared to the calculations of Denison and Schultz, a substantial part of vibrations in growth of the nations (and even within nations) could be explained today in terms of investments in human capital, specifically education. The coefficient of education in production functions remained no more as a 'coefficient of ignorance' that Thomas Balogh labeled the residual.

The recent literature in the endogenous growth theories by Paul Romer (1986), Robert Lucas (1988) and Richard Barro (1999) further demonstrated the role of education in economic progress. The research on endogenous growth, though still in an evolutionary stage, provides many critical insights regarding the role of education, investment in R&D and technical progress in economic development. While Solow considered technical progress as exogenous to the system, according to Romer, technological progress is not an exogenous factor influencing development. Investment in research and development in general and in agriculture in particular attracted the attention of many scholars (e.g., Zvi Griliches). But according to Griliches (2000), R&D is not the source of *all* productivity growth.

Economics of Education in a sense, helped in better understanding of the links between education and labour market. Individual earnings are found to be a monotonically increasing function of education. As Blaug (1972) observed, "the universality of this positive association between education and earnings is one of the most striking findings of modern social science. It is indeed one of the few safe generalizations that one can make about labour markets in all countries, whether capitalist or communist". The relationship between the two, namely education and earnings, is analysed in the form of rate of return to education. Starting from Strumilin's (1925) work in Soviet Russia, thanks to George Psacharopoulos, rates of return to education have become very popular with the students of Economics of Education in all countries of the world. Rate of return to education is estimated either with the help of Mincerian (or extended Mincerian) earnings function ('shortcut' method) or based on discounted lifetime earnings and costs of education ('full' or 'elaborate' method). Education –earnings relationships, one of the most important hard-core aspects of human capital theory figures prominently in this regard. Psacharopoulos has made periodical updates of compilation of estimates of rates of return in a large number of countries (see Psacharopoulos and Patrino, 2004). Though the basic methodology of estimating internal rates of returns to education remained unchanged, several 'adjustments' have been introduced as marginal modifications in the methodology to arrive at finer (or 'adjusted') estimates of rates of returns. Alternative methods of estimating rates of returns to education are also developed. 'Short cut' methods have not remained as short-cut methods. Earnings functions also progressed from the



Mincerian earnings Function used to estimate private rate of return to education to extend and fuller and fuller specifications of the earnings functions. The improved wage equations have contributed to better understanding to interplay of several socioeconomic variables and their effect on earnings. Examination of the education- earnings relationships also brought the issue of distribution of income to the front. As a result of all this, labour economists developed strong interest in Economics of Education. Economic dimensions of education could provide useful explanation of the classical, neo-classical and segmented labour market theories.

The various theoretical and empirical models of manpower planning and manpower forecasting (e.g., Jan Tinbergen, Hector Correa, Herbert S Parnes and H C Bos) were found to be extremely useful in many developing and even OECD countries and have contributed to redefining planning methods for employment. The OECD Mediterranean Regional project under which manpower planning exercises were attempted in a large number of European countries became popular. Several methodological improvements have taken place in estimating and forecasting manpower requirements. Similar exercises were attempted in other developing countries. In a sense, the 1970s was a period of manpower planning. But reviews of experiences of many developing countries later (e.g., Youndi and Hinchliffe, 1985) have shown that manpower planning does not work, though analysis of manpower situation would be extremely insightful into labour market dynamics.

Initial studies on private demand for education attempted at explaining the demand in terms of returns to education. Methodologically estimation of demand function for education involved identification of several social, economic, demographic and other factors. It was a popular method in educational planning for several years. It was increasingly realized that educational planning in many developing countries is based on some notion of social demand, but not on rigorous estimation of demand functions. Nevertheless, it may be noted that research that examined private and social demand for education have made significant dents into Development Economics, necessitating broadening the framework of studies on poverty, inequality, household consumption, and levels of living.

Drawing heavily from tools in Economics, Economics of Education were on expanding in its depth and rigour. For example, micro economic production models are often used to develop and estimate models of school efficiency. Applications of production functions to schools have been on a rise in the studies on school efficiency and research on effective schools (Hanushek, 2003).

Apart from the three major approaches to economics of educational planning and micro economic production models in schooling, researches also focused on issues on financing of education. Starting from the research of Selma Mushkin and Frederich Eddiing in 1960s, research in financing of education has also emerged as a significant area on its own. Drawing from the theories of public finances, scholars have examined several empirical issues relating to principles and practices of public (versus private) financing of education, the rationale for public subsidies, the case of private finances, and unit costs of education. Serious research in the area also contributed to the development of political Economy of Education (Martin Carnoy) and brought the issue that was neglected by neo-classical Economics.

To conclude, several surveys including a 'jaundiced' and other introspective surveys by Blaug (1976, 1985, 1987), surveys of first generation and second generation research by Carnoy (1977, 1955), and many other volumes [e.g., those brought out by Edward Elgar, under the editorship of Blaug in the series of International Library of Critical Writings in Economics, and encyclopedia-based volumes by Psacharopolous (1987) and Carnoy (1995) published by Pergamon] not only give an idea of the stupendous growth in research in Economics of Education, but also highlighted its contribution to development studies and public policy.

Economics of Indian Education

In India too, interest and research in the area of Economics of Education dates back to the early 1960s, if not earlier, with the pioneering works of V.K.R.V.Rao, and later by A.M. NallaGouden, V.N. Kothari, P.R. Pancharukhi and others. Among the earlier scholars, Mokshagundam Visweswarayya (1931) highlighted the relationship between education and economic welfare. As already stated, as early as in 1966 the Indian Economic Association paid serious attention to Economics of Education and human resources. The Education Commission (1964-66) headed by D.S Kothari, has recognized in a major way education as an investment and its contribution to development. In the same context of the Education Commission's work, an elaborate manpower planning exercise was attempted (Trelly Burgess, Richard Layard and Pitambar Pant, 1968). The literature produced in the 1960s in Economics of Education- by V.K.R.V. Rao (1964, 1970), Baljit Singh (1967), Kothari (1966a), H.N Pandit (1969) and others still stand as the best textbooks/references to the students in Economics of Indian Education. The economic analysis of Indian education by Blaug, Layard and Maureen Woodhall (1969) helped in



understanding the problems of educated unemployment. Many stalwarts in mainline Economics including A.K. Sen, P.R. Brahmananda, JagdishBhagwati, AmitBhaduri, Malcolm Adiseshiah, K.R. Shah, D.T. Lakdawala, and Tapas Majumdar, to mention a few, have occasionally but seriously examined some specific problem or other other relating to Economics of Education, and their contributions have remained quite significant. A.K. Sen (1970) K.N. Raj (1970) identified and outlined the crisis in Indian Education, much before the crisis was perceived by many. The trend report by Kothari and Panchamukhi on Economics of Indian Education (1980), followed by periodic reviews by panchamukhi (1997, 2000, 2004) give an idea of the growth of the subject in India. Indian research in the area covered areas such as rate of return analysis, productive functions educated unemployment, private and social demand for education, and for public and private financing of education. Schools efficiency, financing of education and role of the state and markets are also receiving serious attention of the researches in India. Analytical studies on the role of education have not confined to labour markets; some have also examined the role of education in households, in consumption, in the marriage market, etc. The research on Economics of Indian Education is indeed rich and huge in volume and is growing fast. It includes research conducted by Indian researches published in Indian and foreign journals and books, and an equally, in fact, more important volume of researches conducted by outside scholars on Indian education.

While in the 1960s, economists in India concentrated on estimating rates of return to education (e.g., Harberger, 1965; NallaGounden, 1967), and manpower planning (Burgess, layard and pant, 1968), in the early 1970s, the problem of graduate unemployment attracted the attention of many with the widespread pessimism on the potential role of education in promoting economic growth, and in reducing income inequalities. The problem of graduate unemployment was explained with the help of rates of return by Blaug, Layard and woodhall (1969). Manpower planning continued to be considered relevant, as the institute of Applied Manpower Research launched a series of studies in various sectors.

The ‘over educated American’ (Freeman, 1976) was found in India too. Many highlighted the phenomenon of ‘excessive education’ and educational inflation in India (e.g., Ilchman, 1969; Ilchman and Dhar, 1971), educational devaluation (Panchamukhi, 1975) education-labour market mismatches (Panchamukhi, 1980; Varghese, 1989) and the unequalising nature of education (Bhagwati, 1973; Bhaduri, 1978; ManoharRao and Datta, 1985). The ‘excessive education’ phenomenon also led the researches to examine vocational and technical education as avenues to reduce demand for higher education on the one hand, and to improve employability of secondary school graduates. This also followed the government’s intended policies to consolidate and regulate the growth of higher education.

Researches on educational production function, internal efficiency in education, wastage in education (Dandekar, 1956; AERC, 1971), etc., occupied the attention of the educational planners from the beginning. Indian education suffers from a severe degree of wastage. Hence issues relating to internal efficiency, viz., dropout, failures and transition between levels/grades in education have been studied not only during the 1960s and 1970s but also they continue to be items of priority for research. Besides the relationship between education and economic development, the relationship between education and agricultural productivity, education and fertility and demographic change also received the attention of the researches (e.g., Chaudhri, 1968; Ram and Schultz, 1979; John Caldwell, Mark Rosenzweig, Robert Evenson, PRG Nair, 1981; Jeffery and Basu, 1996 etc.). Education is found to enhance labour productivity both in manufacturing and agricultural sectors. Demand functions are also estimated that explained the determinants of schooling, determinants of non-enrolment and dropout of children from schools and unequal access to education. Kothari (1991) has shown that earnings and rates of return are a function of several variables like labour market conditions, social and individual characteristics etc. Inequalities between different socioeconomic groups of population in education, the distributional impact of public expenditure on education on different groups of population and the consequent inequalities in labour market have also attracted many as important research issues.

Despite the knowledge of some of the inherent and practical limitations attaches to rates of return analysis, the method is still popular among the researches. Studies on rates of return were continued to be conducted; but their scope has been altered; they focused on inequalities; rates of return to education by gender, by caste group (Scheduled castes/tribes, Harijans, etc), by rural-urban region etc., (e.g., Tilak, 1987, Debi, 2004; Marar, 1986) or by type of education (e.g., management education, by paul, 1972; Scientific and technical education by Duraisamy and Duraisamy, 1993) were estimated. Tilak has shown that investment in education of weaker sections like women, rural children and backward castes, is justified even from the point of view of economic returns alone, quite apart from the social, historical and cultural implications. Many studies on basic relationships between education and economic development- earnings, productivity, economic growth, poverty, and income distribution have firmly concluded that investment in education in education in India pays rich dividends.



Though in the resources-scare economy of India, issues relating to costs and financing of education and utilization of resources have been a matter of series concern especially since the beginning of the 1970s, a decade characterized, following wars with the neighbouring countries, by inflation, unemployment, student unrest, etc., a strong interest in the issues relating to financing of education marks the decade of the 1990s, that broadly corresponds with the era of adjustment and new economic reform policies in India. Several studies have shown that the adjustment policies have negatively influenced the trends in public expenditure on education (e.g., Tilak, 2003). These studies have shown that there has been a rapid increase in the levels of family expenditure on education; and this does not represent increase in willingness to pay for education, but that households feel compelled to do so, given the declining public expenditures. The complementing versus substituting relationships between government and household expenditures on education were also studied by some. Further, some scholars have examined the several cost recovery mechanisms that were introduced in the Indian system. However, research on these aspects has not been abundant. The effects of the enthusiastic entry of external aid into the education sector and initial reluctance of the government to accept the same, and how the trends were reversed were also briefly examined by some (Tilak, 2006). Given the vast size of the country, several researches also focused on regional disparities in human capital development (Ashok Mathur, 1987, 1990).

The same macro policies also raised interest of the researches in the role of the state versus markets in education in the 21st century. In the early 1980s there was an emphasis on private education, markets, competition, etc., but by the end of the 1980s, as Blaug (1986) and Carnoy (1995) noted, the emphasis laid on private education became counter productive. But by late 1990s or by the beginning of the 21st century, markets began to become important. A few studies were conducted examining the relative efficiency of public versus private schools (Govinda and Varghese, 1993; Kingdom, 1994; Duraisamy, 2003); but they produced mixed results, indicating the need for more elaborate studies on the same. Economics and other social scientists also paid serious attention to research on complex relationships between education and the society, stratification and inequalities, and how the non-liberal policies influence these relationships.

Interestingly these trends in Economics of Education in India broadly correspond with the global trends- initial interest in rates of return and manpower planning, then a shift towards educational production function studies, internal efficiency and demand functions, and then a further shift to costs and financing of education. In the area of financing of education also, the trends in India corresponds with the global trends- high rates of growth in public expenditure on education in the 1960s, negative rates of growth in the 1970s, steady but slow positive growth in the 1980s, and declining growth in the 1990s that accompanied the adjustment policies. Research interests shifted accordingly from examination of allocation of public resources, to mobilising non-governmental resources, then to alternative methods of cost recovery, and to privatisation of education.

Further, while in the 1960s and 1970s research in Economics of Education covered all levels of education, including higher education, research in the 1980s and in the later period concentrated relatively more on primary (and elementary education). This has also been a global trend. With the recognition of the poverty alleviating role of primary education by the World-Bank in the mid-1980s, and with the launching of the Educational For All Programmers in 1990 and the adjustment policies in most developing countries in the 1990s, attention of the policy markers shifted drastically towards primary education and away from higher education; so is the attention of the policy makers and researchers in Economics of Education in India. Recent studies on higher education get confined to examining issues relating to mobilising resources and improvement in financial efficiency.

At the policy and planning level, none of the standard approaches to economics of educational planning, viz., rates of return, manpower requirements and social demand formed the basis for educational planning, though there were frequent references in the 1970s to manpower planning and to the manpower planning exercise carried out by the Education Commission. Given the increasing constraints on resources, research on alternative methods of financing is likely to attract the attention of the policy planners.

On the whole, as Carnoy (1995) observed, “Economists of education have graduated from narrow estimates of the productive value of formal schooling to explaining, by the means of both statistical and historical methodologies, the complex relations between education, the state and the labour market.” This holds true for Indian economists of education as well.

Some Stylized Facts

The slowly but steadily growing research in Economics of Education in India has provided robust evidence to make a few stylized facts, as follows:



- Expenditure on education is a variable investment. Education matters, economically-for economic growth, reduction in poverty and inequalities, improvement in income distribution, besides contributing to other social, political and cultural dimensions of development and human development. From a narrow point of view of economic returns also, there is sufficient justification for public funding of education, in comparison with other economic sectors.
- Public investment in education of the weaker sections is also justified strictly on economic efficiency grounds, besides for social and political reasons.
- Education poverty and income poverty are closely inter-related. A sustained method of breaking this cyclical relationship is attack on education poverty.
- Demand for education is considerably influenced by poverty and other social and economic factor, including costs of schooling on the one hand, and school related factors on the others. The relative important of tradition and other factors as determinants of participation of children in schooling declined over the years.
- Demand for education in general, and more particularly secondary and higher education seems to be highly income and price elastic.
- Rates of return serve some important purposes but do not serve as sufficient criteria investment decision making across levels/types of education, or in education vis-à-vis other sectors. The information generated in the context of rate of return analysis is, however, very useful, providing valuable insights into several related aspects.
- Manpower planning does not work in rapidly changing economics, which are also increasingly dependent on market forces and international factors. But analysis of manpower situation is very useful to understand the dynamics of labour markets.
- It is not only literacy and primary education, but also secondary and higher education contribute significantly to economic development, reduction in poverty, improvement in income distribution and improvement in human development indicators. All levels of education are important, they are inter-dependent on each other and hence it is not be proper to have a fragmented approach to education. One level of education cannot progress at the cost of other levels of education.
- Internal efficiency in education requires investment in good quality formal schools, and reliance on non-formal and other less expensive methods would be costly in the long run.
- Research on the relative effectiveness of private and public school is still modest and inconclusive. Similarly the role of the market in education is found to be very important.
- Public expenditure on education is critically important to improve the educational levels of population. Strong and vibrant education systems with national values cannot be build by a heavy reliance on private finances.
- Sustained levels of investment in education are necessary for improvement in education levels of population, and for education in turn, to effectively contribute to development. But public expenditure on education in India experienced rising trends in the 1960s, followed by a steep decline in the 1970s, and then a slow and steady increase in the 1980s, followed by the again severe cuts in the 1990s. Such serious fluctuations may not ensure building a strong and sustainable education edifice.

Weakness of Economics of Education

Ever since the very beginning of the 'human investment revolution in economic thought' in 1960s, scholars have been busy with the measurement of benefits of education (e.g., Weisbrod, 1964). Researches largely concentrated their attention on direct economic benefits of education, and were content with mentioning about the nature and direction of indirect and non-economic benefits, what can be called externalities. Externalities in education are indeed huge and complex. Some of them do not rise automatically in every society. As Joseph Stiglitz (1999, p.65) stated, it is not just from the numbers of educated people or from the years of schooling of each that externalities are generated, it depends upon the patters of specialization and the nature and level of interaction with economic organizations. The inability to measure non-economic benefits remained as a major shortcoming, though many recognized the need to develop methodologies to measure the indirect social benefits. Despite some attempts (e.g., Walter McMohan, 1999) to measure some of the indirect benefits, this remains the most important weakness of the economic analysis of education. As a result of the inability to measure the externalities, as Griliches (2000) concludes, variables on change in human capital do not show up as strongly in the cross-country productivity regression equations or in growth accounting equations as one expects.

The inability to capture externalities also undermine the value of rate of return estimates to a considerable extent in educational planning, as the social rates of return to education are not truly 'social'. The true social rates of return should include the externalities as well. Otherwise, the estimates on social rates of return that we have can be regarded as essentially private or at best as a little more than private rates of return. Tapas Majumdar refers to the use the concept of 'social' rate of



return as a serious ‘category’ mistake. Category mistakes refers to defining a concept for operational reasons differently-different from a standard use, allow yourself to forget or overlook the difference and finally argue that it does not matter. “These are simply errors due to using familiar technical terms for describing categories of things that fulfill only loosely, but not rigorously, all the conditions that the technical definitions require” (Majumdar, 1997, p. 39).

An important weakness of Economics of Education is the inability of the economists to measure quality of education. Quality in most of the studies is measured with the help of proxies, many a time poor proxies. Many a time, it also refers to quality of inputs, but not to the quality of outputs, the school graduates. Quality of education is directly related to the quality of labour, and the earnings and return to education. Since the measure of education captures only the quantitative dimension and not the quality of education, the return estimated to investment in education are only partial estimates and they remain as under estimates.

While Schultz’s human capital theory highlighted the productivity role of education, the screening theories stressed the screening and labeling functions of education, and not the productivity role. But education performs both functions. Unfortunately they cannot be separated. As Blaug (1987) highlighted the inability to separate the productivity from the screening functions of schooling continues to pose serious problem in Economics of Education. As a result, the relative importance of these two functions cannot be understood; one cannot even say what is the total contribution of education, or the true social rate of education to education.

Further, the inability to separate the consumption and investment components in expenditure on education is still regarded as an important problem, in estimating the contribution of education to development. This has been a serious problem, raised in the very early 1960s, immediately after the concepts of investment in education and human capital were formulated. But it still remains unsolved. No methodologies could be developed to separate them. Education is regarded as a public good, as a social merit want and also at the same time as private consumption. This problem assumes further importance, as it is increasingly realised in the human development frame work, that education is not merely a means for reaching higher levels of development but also and more importantly an end in itself; education is development. As Kothari (1966, p. xiv) stated, “viewing education merely as an investment can be tremendously destructive’ of the diverse nature of education.

There are several studies on growth accounting particularly in advanced countries (Griliches, John Kendrick, Denison,) and some in India (BikulDholokia, 1974; Sivasubramoniam, 2004). First, as Griliches (2000) reminds, ‘accounting’ is not explanation; growth accounting equations do not explain much. Moreover, the unexplained residual is still high, and many argue that the contributions of education, R&D and technical progress are not fully accounted, nor are their contributions proved to be distinct from each other. Despite several attempts, as Griliches (2000, p. 75) observed, “No smoking gun has been found, and no single explanation appears to be able to account for all the factors, leaving the field in an unsettled state until this day.” Balogh’s criticism that it is a ‘coefficient of ignorance’ may still be valid, though to a lesser extent than earlier. Hence the search for explanations for the unexplained economic growth continues.

To sum up, despite some of the important methodologies improvements, there remain several fundamental weaknesses in Economics of Education. In a sense Majumdar (1997) is right, when he argues in his BabatoshDatta Memorial Lecture I that “In spite of the many conceptual and methodological refinements that were introduced over the decades, several of the basic deficiencies have persisted ... Not only did economists fail to take of these initial problems adequately, some of the problems... actually got compounded over the years...” (p. 39).

In India, the Economics of Education is associated with some more problems. Economics of Indian Education has been stagnant in theoretical, conceptual, philosophical and methodological aspects. Empirical applications are on increase, but methodological improvements are not seen. As panchamukhi (2000, p. 51) lamented, “the conceptual and rigorous, theoretical studies in economics of education are missing”.

Secondly, research on Economics of Indian Education is largely influenced by research in the west on the one hand, and the changing policy corners of the government and in the recent years by those of the international aid organizations on the other. Though this is not altogether defective, there is much scope for alternative approaches to develop its own agenda by the research community. For example, one of the important areas that did not attract attention of many is on centre-state relations in funding education, an important issue in a federal system like India. In fact, one can make a long list of gaps in research in Economics of Education in India.



Some of the problems in research in Economics of Education in India owe their origin to imperfectly developed, and inadequate empirical database. Official statistics on some aspects on education (e.g., school enrolments) are highly suspect; and those on many other aspects are dated and lack details; and the data provided by household surveys like the National Sample survey are incomplete, as they do not provide data on schools. The later also do not allow any time- series analysis. Further, the absence of data is also responsible for absence of longitudinal studies on educational issues. There are indeed several gaps in research in Economics of Indian Education that owe to the weak database.

Finally, while there has been a remarkable growth in the search in the area, paradoxically, one notices that Economics of Education still remains at the periphery in the Departments of Economics in many universities and research institutions in India. (This is true to some extent in universities abroad as well.) Many Departments of Education of Educational studies look down Economics of Education, as an application of the unethical principles and canonical model of the mammal science (if not 'bastard science' in the words of John Ruskin) to the holy discipline of education, injecting 'insidious poison in the body politick'. Such a criticism ignores the fact that the nature and boundaries of Economics have undergone a tremendous change over the years that economic analysis of education unravels various important dimensions of development and that Economics of Education has come to stay. Very few universities in India offer Economics of Education as a main or as an optional subject in the Master's studies or at M.Phil (or Pre-Ph.D.) course levels in Economics or in Education, though it is also recognised at the same time, again paradoxically, that it has "got an unshakable place now in social sciences as an important component deserving the attention of the researchers and policy makers" (Panchamukhi, 2000, p.50). This may be partly because, education, by its very nature is inter-disciplinary; and economic analysis of education may not be able to provide a comprehension understanding of educational issues that are intricately related to sociological, cultural, and political aspects, besides individual, psychological and human factors. However, in the recent years, attempts are initiated to introduce at post graduate level optional courses such as Economics of Human Development that include Economics of Education and Economics of Health, or a course titled Economics of Education and Health. But they seem to be feeble attempts and the number of such universities where it is offered is very small. There is still a long way to go. Importantly, in the same context, it may be noted that while there are valuable high quality papers on various aspects in Economics of Indian Education, few textbooks exist on Economics of Indian Education, except for the ones produced in the 1960s that form a part of the first generation research.

Conclusion

In conclusion, let me borrow from Blaug (1987, p. 333) and state that "I come not to praise economics of education but also not to bury it." What I have tried to do in this paper is to present a flavor of the field of Economics of Education, particularly to those who are not very much familiar with it, how it has grown, or more importantly how it tends to stagnate, and some of the countinuing weaknesses with which the area was born in 1960. I cannot claim the paper to be either exhaustive and comprehensive in coverage of issues in Economics of Education or in-depth and thorough in my review of several aspects. In the quick review that does not include, due to constrains on space, a large number of studies on various issues, I have also made somewhat sweeping generalizations, without highlighting many details and minor exceptions, as if whatever I said is universally true, which is certainly not the case.

Compared to the queen of social sciences, Economics of Education is very young; it is only 45 years old. And compared to the voluminous research in Economics, research on Economics of Education is somewhat mearge both in quantity and quality. But it progressed a lot during the last four and a half decades; it had a glories period, suffered severe setbacks for some-time; it experienced a steady but slow revival for some time; tend to grow fast for some time, again to stagnate and to grow. Some feared that it would die in the 1970s as a field of academic activity. On the contrary, the decade saw a vigorous development of the subject into new directions, such that we can now distinguish a well-defined second and third, as contrasted with a first generation of research in Economics of Education. On the whole, it proved many astrologers and predictors wrong, as it did not 'degenerate' as feared by Blaug (1976); rather it progressed at an impressive pace. Economics of Indian Education also progressed remarkably during the last four and half decades. But while empirical applications multiplied, theoretical contributions have not experienced a significant growth. Of course, one cannot expect growth in theoretical developments as much as in empirical applications in social sciences.

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