Chapter 2

Review of Literature
The chapter deals with an appraisal of the literatures that deal with schools and literacy and various externalities and spill-over benefits that schooling and education bring to individuals and to the economy as a whole. Here we look at the theoretical and empirical developments that deal with the economic and social returns to education, especially primary education, and the crucial role it plays in empowering individuals by increasing their productivity and earnings, thereby achieving social and demographic progress and sustained economic development. We also trace the range of literature and the numerous empirical studies that validate the significance and the rationale of investment in education and the consequential spill-over benefits and externalities such investments bring to the whole economy.

The chapter is divided into four sections. First section furnishes a brief overview on the importance of education on human development and social development. Points of views on the rationale and significance of public finance in education, the importance of adequate and judicious public funding in education, and the role and significance of education in human development are described as well. The second section compiles the literature on education and primary schooling. There are a number of literature that analyse the importance of investment in primary schooling and the returns it brings to the individuals and to the economy as a whole. Third section is devoted to literature that deals with the relation that exists among education, earning capacity, and employment. Literature on relationship between literacy and economic growth and the many spill-over benefits that result from investment in education and human resource development is elaborated in the fourth section. This is followed by concluding remarks.
2.1. Overview: Investment in Education

Education is regarded as the cornerstone of human and social development. It empowers people with knowledge, skills, values, and attitudes that help them improve the quality of their life, enhance their productivity and their capacity to acquire new skills, and thus enable them to participate more fully in the society and economy. Low levels of educational achievement on the other hand act as a major hurdle to large sections of the society in their integration with the rest of the society and economy. The more education individuals acquire, the better they are able to absorb new information, acquire new skills, and familiarize themselves with new technologies (Bartel and Lichtenberg, 1991). These attributes of the educated eventually become crucial factors in the case of most individuals, as they give definite advantages over the less educated and ensure increased value in labour markets, enabling them to increase their employment prospects, earning and participation in the economy. Jacob Mincer (1993) identified three advantages that educated workers have relative to less-educated workers: higher wages, greater employment stability, and greater upward mobility in income. The amount and the quality of education individuals receive, besides affecting their earnings, also affect the quality of their employment, and more importantly, the quality of their life as well.

Besides its influence on the ability of individuals to acquire higher wages and income, education also affects their behaviour and decisions that increase the probability of their success in avoiding poverty and exploitation. Amartya Sen (1987) pointed this out when he said, ‘education helps individuals in the conversion of money and resources into functionings; while at the same time influence the behaviour of the individuals, their aptitudes, attitudes and opportunities which in turn reflects in their greater capacity
to overcome poverty conditions’. Education allows people, particularly from disadvantaged groups, to enhance their ability in resisting oppression and get a fairer deal (Dreze and Sen, 2003). The economic and social return to education, especially primary education, is substantial for weaker and disadvantaged groups as well as the poor in the society, as it enables to make best use of the economic opportunities and integrate themselves with the mainstream. Generally, better educated are known to earn higher wages and experience less unemployment in their lifetime. Likewise, more education is correlated with improved public health, better parenting, lower crime rates, better care of the environment, wider political and community participation, and greater social cohesion, all of which in turn are likely to revitalize economic growth.

Education endows the educated with several unambiguous advantages over their less educated counterparts in improving the quality of life, that in turn determine, to a very great extent, one’s social and economic status. The varied attributes that the educated people acquire through educations and training enhance their value in the job market, making them more suited for employment and eligible for higher wages. These in turn create conditions conducive for accelerated economic growth. Human capital theorists, treating investment in education, training, and skills development as important as investment in other physical capitals, undoubtedly maintain that the degree as well as quality of education play vital role in paving the way for greater productivity, and higher earnings. Education, thus, has remained as a key factor in human endeavour for development.

The proclivity of human beings in acquiring skills and knowledge is as old as human history itself. The evolution history in itself is an amazing story of learning and acquiring essential skills that have greatly benefited human beings in their survival,
progress and wellbeing. The incredible advancement in the cultural, socio-economic and political evolution of humankind is essentially the result of a never-ending eagerness to discover, gain knowledge and put that knowledge effectively to its most beneficial use, ensuring development and wellbeing, not just of individuals, but whole societies as well. So much so, today, formal and non-formal education and training have become one of the major social institutions that influence various socio-economic, political and cultural aspects of the life of individuals as well as of nations. The ever-growing scientific and technological advances and their varied forms of application in everyday life is rapidly transforming the world today, leading to an incredible and unprecedented progress, wherein education is regarded as a necessary pre-condition, not just for behavioural and attitudinal changes, but as an essential input for modernization, economic growth, and self-reliant development of economy (Chatley, 1995).

Despite such progress, ‘sustained and equitable development remains the greatest challenge facing the human race… more than 1 billion people still live in acute poverty and suffer grossly inadequate access to the resources – education, health services, infrastructure, land and credit – required to give them a chance for better life’ (World Bank, 1992). The ever widening gap that exist between the rich and the poor, especially in terms of the inadequacies that the poor face in having sufficient and quality food, clothing, shelter, health care, and clean and safe drinking water, and access to quality education are not merely economic concerns, but they are more importantly, ethical question that disturb. Combating income inequality, unemployment and poverty, therefore, is the greatest challenge facing societies, policy makers and governments everywhere. Given such a scenario, ensuring that the fruits of development reach everyone, especially the most needy in the society, through an equitable distribution of
resources, opportunities and benefits is a major task facing the world today (Rao, 1996). It makes sense therefore to invest in education, because development of human resource forms the foundation of all other development. Education thus becomes an essential ingredient for human development, seen not merely as a means to an end (increased output and better earnings) but as an end in itself. It is in this context that the role of education assumes its unique position as a critical investment tool and an essential determinant of labour productivity and sustained economic development. Access to basic education is therefore considered as an element of fundamental human right.

The strong positive relationship that exists between education, earnings and economic growth is among the most researched and well established relationships in social sciences. The increased understanding that emerge out of these studies on the social dimensions of education and the linkages that exists between education and a whole lot of other significant variables like unemployment, poverty, population growth, sanitation, health, and environment among other things, make decisions on investment in education critical.

"Investing wisely in education yields real results for workers, business and society in general. If people coming into the workforce do not have what it takes to succeed in today’s economy, unemployment and poorly paid jobs will be a permanent obstacle to true economic success." (Mishel, 2004)

Investment of all types in education ensures returns, both to the individual and to the society. Moreover, the many spill-over benefits and the multiplier effects that result from such investment in education and human development makes it particularly important to be regarded as an essential prerequisite for development, and a critical ingredient in raising individual earnings, accelerating nation’s productivity, fuelling growth, better distribution of wealth and the elimination of poverty. More importantly, investments in human capital assume its significance from the fact that the ultimate goal
of all development and economic growth is the improvement of the quality of life and human wellbeing, which is realized only through education and human development.

"The skills of a nation's workforce and the quality of its infrastructure are what make it unique, and uniquely attractive, in the world economy. Investments in these relatively immobile factors of worldwide production are what chiefly distinguish one nation from another; money, by contrast, moves easily around the world. A workforce that is knowledgeable and skilled at doing complex things, and which can easily transport the fruits of its labours into the global economy, will entice global money to it" (Reich, 1991, p. 264).

Investing in formal education helps in sharing the gains of economic growth more broadly throughout the economy, and offset the prevalence of inequality. Amartya Sen (1988) reiterated this when he said, ‘education has an intrinsic importance; in terms of fulfilling aspirations for enlightenment, self-improvement and social interaction.’

At the aggregate social level, both private and public investment made in education and skills development programmes assume importance as it has a direct bearing on the formation of human capital, and on scientific and technological advancement considered crucial for today’s economic development. As such it is important to note that a higher level of human capital, which is primarily the result of increased educational attainment and training, almost always results in higher productivity, revealing the existence of a positive relationship between educational attainment and earnings. The role of both direct and indirect influence of private as well as public investment in human development and its inevitable influence on earning capacity and economic growth is irrefutably proved by the large number of empirical studies (Lucas 1988, Brunello and Comi, 2000; Card, 1995; Psacharopoulos, 1981) undertaken in varying contexts. The multiplier effects that investments in education bring about are known to be more widespread and far-reaching than investments in other resources.
Improving the population quality through investment in education, training, innovations and research, improvement in health, and nutrition among other things, pays rich dividends. This is proved from the historical examples of the remarkable recovery of war-devastated economy of countries like Japan and Germany. Their swift recovery from total devastation and eventual rapid growth in a relatively short period is seen as the product of the quality of the human capital these countries possessed, especially the technically skilled work force, and the strength and quality of their research and innovations.

2.2. Education and Primary Schooling

A person’s early years are particularly important for personal growth and development. Investment in early education therefore assumes importance. Conclusive evidences on the returns to primary education as given by Schultz (1991) indicate that the social returns to primary schooling are considerably greater than those for higher education. Successive World Bank Policy Papers on Primary Education (1990, 1995, 1999) stressed the direct and positive impacts of primary education on earnings, and highlighted various researches to show how primary education improves farmer productivity, provide various health benefits and act as a credible tool in poverty alleviation. Maurice Boissiere (2004) in a Background Paper for the Evaluation of the World Bank’s Support to Primary Education, titled ‘Rationale for Public Investments in Primary Education in Developing Countries’ stressed the importance of primary education and insisted that primary education is what lays the foundation for a more productive labour force through the promotion of literacy, numeracy, higher education and training. This view is shared by Psacharopoulos (1994), who provides a
comprehensive set of estimates on the profitability of investments in education around the world to conclude that primary schooling must remain “the number one investment priority” for developing countries as it has the ability to take the country on the road to development. According to him the returns to education follow the same rules as other sorts of investments, however, the rate of return to an additional year of education is marginally higher for girls (increasing earnings by 12.4 percent on average) than for boys (11.1 percent), and that they tend to decline as the investment is expanded.

Mingat and Tan (1996) in their research on the rate-of-return analysis in education have also found that for low income countries, primary education is the best investment option while for middle-income countries it is the secondary education that yields the highest social returns. In the case of high-income countries, however, it is tertiary education that yields the highest returns. Colclough and Lewin, (1993) present several evidences from various researches conducted across the world to show that primary schooling bring about several advantages that include improved productivity in rural and urban self-employment, enhanced agricultural production through better quality decisions on agriculture, increased entrepreneurial initiatives, improved health related decisions, and increased life expectancy. Irrefutable historical evidences prove with certainty that the developed and industrialized countries achieved significant growth only as a result of the achievements they had made in attaining universal primary education which in turn positively influenced the employability and earning potential of their people.

The experiences of developed countries, especially of the west, are impressive case in point, to show the importance of the development of human capital in the economic and social development of nations. O'Rourke and Williamson (1997), and Foreman-Peck and Lains (1999), in their elaborate studies have found that high levels of primary
schooling and literacy have contributed to the rapid rates of convergence for European countries in the late nineteenth century. Connolly (2004) shares the same view that primary schooling and literacy have contributed to rapid rates of development for European countries in the late nineteenth century and at the state level for the U.S. over the twentieth century. America’s extraordinary growth in the twentieth century is also attributed to the huge expansion in education. In 1940, fewer than 25 percent of Americans over twenty-five years of age had a high school diploma; by 2000, more than 80 percent had graduated from high school. In addition, the percentage of Americans over twenty-five with a bachelor’s degree rose fivefold during that period, going from 4.6 percent in 1940 to 24.4 percent in 2000 (US Census Bureau 2003). Likewise, Rao (1996) in his analysis found ample evidences to prove that the economic development achieved by the newly industrialized countries of Korea, Singapore and Hong Kong and the fast growing economies of Thailand, Portugal, and Greece among others were accompanied by expansion in primary education undertaken in those countries. Sen (1999) maintains that Europe, North America, Japan, and East Asia had the benefit of widespread primary education in their respective countries to fuel faster economic development.

Shenggen, Somchai and Nuntaporn (2004), citing the example of Thailand which achieved one of the highest economic growth rates in the world, averaging 7.5 percent per annum over the period from 1977 to 1995 say that the country had coincidently made great achievements in the field of education during the same period, proving once again the importance of education, especially at the primary level that made such growth possible. The literacy rate of the rural population had increased from 77.5 percent in 1977 to 91 percent in 2000, with the average years of schooling for rural residents improving from 3.7 percent in 1977 to 5.9 percent years in 2000, a more than
50 percent increase in two decades. Duflo (2001) who analyzed the impact of a massive school building program in Indonesia where 61000 primary schools were built between 1973 and 1978 in those areas in which children were least likely to have enrolled prior to the building program, estimates an economic return to an extra year of schooling of roughly 10 percent which confirms the view that primary education is important for the overall development of the economy of a country. Clark (1940) however holds the view that in the absence extensive research it is difficult to establish which specific schooling resulted in increased income gains; though in his review-cum-study of the various earlier studies on the different regions of America, he acknowledged the high relationship between the amount of schooling and income in one’s later life. Returns to education is found to be highest in the case of investment in primary level education compared to higher levels of education, especially in developing and less developed countries.

Duraisamy and Duraisamy (2005) who used National Sample Survey Organisation (NSSO) data in their study found that the returns to primary education in Indian context were greatest in the less developed states, though the returns is low varying between 2-10 percent while secondary education had higher returns at 12-24 percent. Estimating the rate of return to education in India, Duraisamy (2002) found the tendency of the rate of return to increase up to secondary level education and then remain at a lower level for higher level of education. Appleton and Balihuta (1996), in their study undertaken in Uganda on how primary schooling of farmers and that of neighbouring farm workers can raise crop production, found important externalities that proceeds from education that the farmer had acquired do not limit itself to the recipient of the education but proceeds to his neighbours as well. Rao (1996) in his book ‘Human Resources Development, Experiences, Interventions, Strategies’ quoting World Bank Reports
1980 and 1987 points out that several researches in developing countries have found much higher returns to primary schooling, where it averages around 27 per cent while the returns to secondary is only around 15 to 17 per cent. United Nations Press Release (1999) emphasized the influence of primary schooling in increasing the productivity of peasant farmers, particularly when they have access to the other inputs needed to enhance their production. It also insisted that the earnings of the self-employed, including those in urban and informal sector activities, are higher for the educated than for the uneducated.

2.3. Economic Growth and Spill-over Benefits

A vast body of literature speak of a wide range of economic and social reasons for associating education with growth. The interest generated by the relationship between education and economic growth led to numerous empirical studies. According to Card (1999), “Few empirical relationships have been more frequently investigated than the one between years of schooling and earnings. Literally hundreds of studies using alternative data sets from developing and developed countries, spanning many decades, and employing alternative specifications to correct for various potential sources of bias, have derived amazingly consistent estimated private returns per year of schooling.” Studies such as the ones by Psacharopoulos (1994), Card (1999), Harmon, Oosterbeek, and Walker (2003), Psacharopoulos and Patrinos (2004), Nagia (1979), Pinto (1985), Panwar (1978) have all reviewed and interpreted this basic relationship in different settings. Consequent to such studies, today there is greater acceptance on the importance of education in human development. More than ever, today there is greater concurrence on the role of education as the inevitable key to economic and social
development. The European Council underlined this fact when it said that “education and training are critical factors to develop the EU’s long-term potential for competitiveness as well as for social cohesion” (European Commission, 2006).

The Nobel Laureate, Robert Solow (1957), attributed the growth of national income to three sources namely: the increases in the stock of physical capital, the increases in the size of the labour force, and a residual representing all other factors. Solow described this residual as the “technical progress” and noted that increasing levels of education as the main factor that contributed to its growth. In the relationship between education and economic development two important specifics emerge: higher educational attainment lead higher productivity and higher wages, and increased labour force participation lead to decreased probability of unemployment and poverty. Besides the more direct benefits such as providing substantial improvement to one’s earning capacity; and ensuring scientific and technological advancement so essential for any far-reaching growth and development, investments made in education is also known to bring about many ‘externalities’ to the individuals concerned as well as to the entire society. Studies by Pritchett (2001), Benhabib and Spiegel (1994), and Bils and Klenow (2000) have found a weak relationship existing between changes in schooling and growth, while others like Topel (1999) found a strong and vibrant relationship existing between the two. But as Temple (2001b), and Woessmann (2002, 2003) point out, much of these conflicts could be attributed to possible measurement errors in the education variable, paucity of relevant data especially in developing countries, and on how the relationship between schooling and output is specified.
In spite of a few such contentious results, a large number of studies have come up with conclusive evidences supporting a positive and definite relationship between education and development, proving the fact that education is among the key factors that has a distinct bearing on the degree of income and economic inequality. The findings of these studies reveal the fact that higher individual earning is indeed associated with more schooling. They also show that the rate of return to schooling across countries, with a few variations, is generally centred at about 10 percent, with higher returns for low income countries, lower levels of schooling and for women (Psacharopoulos and Patrinos, 2004).

“If higher levels of productivity reflect higher levels of human capital, which are in turn primarily a result of increased education, then a positive relationship should exist between educational attainment and earnings”. (Saxton, 2000).

Education affects economic growth by enhancing the human capital inherent in the labour force, which in turn increases labour productivity, leading to higher equilibrium level of output as explained in neoclassical growth theories. More importantly, education paves the way for increased innovation that result from acquiring new knowledge on new technologies, products and processes that promotes growth as in theories of endogenous growth put forward by Lucas (1988), Romer (1990), Aghion and Howitt (1998).

Besides being a facilitating agent, education thus becomes an essential means in the transmission of knowledge and the adoption and adaptation of new processes, information and technologies that promote economic growth (Nelson and Phelps, 1966; Benhabib and Spiegel, 2005). Numerous theoretical and empirical studies have consistently come up with strong case for education, by establishing a positive
relationship between educational qualification and income earned; and considering it as a tool to improve the earning capacity of people, overcome the vicious cycle of poverty and to ensure equitable distribution of wealth. Empirical evidences indicate that economic growth in advanced countries was more attributable to human skills, rather than capital. Broad conclusions that emerged from the many studies such as the ones by Shultz (1960, 1961), Becker (1975), and Dennison (1962) in the developed countries suggest that a major part of the growth in production in the past century was indeed the result of technical progress and development of human resources; through education, training and research and not merely due to an increase in inputs of physical capital, person-hours and natural resources.

Without the essential and active role played by the human agents, the productive potential of a country cannot be reached. Human interventions have always dominated and directed economic development. The processes of economic development more than anything else involve the essential role of human resources in the utilization of physical resources. In accounting for the growth of total output; it was found that the growth of capital stock was relatively of minor importance when compared with human capital (Abromovitz, 1956; Solow, 1957).

It is in this context that Frederick Harbison (1973) in his book, ‘Human Resources as the Wealth of Nations’ observed:

“Human resources, not capital, nor income, nor material resources constitute the ultimate basis for wealth of nations. Capital and natural resources are passive factors of production; human beings are the active agents who accumulate capital, exploit natural resources, build social, economic and political organization; and carry forward national development.”
It is obvious that a country that do not give due importance to its human resource and is unable to develop the skills and knowledge of its people and utilize them effectively in the national economy will face several disadvantages in the face of the stiff competition in the globalized economy and will be unable to develop and provide a respectable living for its people.

“... the most important economic resources in the world consist of the acquired abilities of people that include their education, experiences, skills, and health. It is human capital, not space, energy, cropland, or other physical properties of the earth, which is decisive in improving the welfare of the poor throughout the world. Investment in population quality through schooling, work experience, and improvement in health enhance human capital and contribute significantly to productivity and to personal satisfaction. Moreover, increase in the required abilities of people and advances in useful knowledge hold the key to future economic productivity and to its contribution to human wellbeing.” (Schultz, 1981).

Thus, it can be safely contended that education or lack of it, affect a large number of socio-economic variables and play a significant role in improving incomes and productivity of people. In his book, ‘Investment in Human Capital and Personal Income Distribution,’ Jacob Mincer (1958), pointed out that higher wages, greater employment stability, and greater upward mobility in income as the three important advantages the educated have relative to less-educated workers.

Educational outcome of an individual, while having significant impact on income earning capacity of individuals and the economic development of a nation, is influenced by several socioeconomic factors like family background, the education and income of parents, school resources etc. Using test-score data from the International Adult Literacy Survey in a panel of 14 OECD countries, Coulombe and Tremblay (2006) found that the quality measure of education outperforms quantitative measures. Earlier studies by Coulombe, Tremblay, and Marchand (2004), had also found similar results to
affirm the view that quality of education and training has a definite and valuable effect on earning capacity of people.

Reaffirming human resource development as a vital aspect of integrated national development efforts, the Jakarta Plan of Action (JPA), an outcome of a series of deliberations by United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), recognized the need for informed and concerted national and regional action in the field of human resource development. The JPA highlighted that the development of the full potential of human beings stands at the centre of economic and social development process and proposed certain action plans that included the call to give priority to eight major points:

1. Human resource development in overall development planning;
2. The establishment of policy and planning bodies in each country for human resource development;
3. Making special budgetary provisions for human resource development;
4. Having inter-ministerial and inter-departmental cooperation for integrated development;
5. Popular participation in planning, implementing, monitoring and evaluating of human resource development;
6. Giving special attention to be given to disadvantaged groups;
7. Policies, plans and programmes on employment and self-employment generating activities, and
8. Private and NGO participation in human resource development programmes.

The benefits of education and human capital accumulation rather than being exclusively restricted to the direct recipient, spill over to others. It means that the educated workers besides enhancing the productivity of their own labour and that of the other capital they use at work are known to contribute to the raising of the productivity of others around them. Such ‘spillovers’ in turn influence greater surge in economic productivity and enhance the prospects for long-term growth. The many benefits education yields to
individuals and the society spill over and extend to diverse areas such as technological advances, population growth, health and hygiene, reduction of poverty and inequality, labour force participation, political stability, democratization and human rights, the environment, and crime and drug use, to name only a few (McMahon 2003; Lochner and Moretti 2004; Currie and Moretti 2003; Dee 2004; Milligan, Moretti, and Oreopoulos 2004). The fact however remains that all this depend to a great extent on a number of factors such as the characteristics of individuals, family background, ability, level and quality of schooling, the government policies, and the importance given to investments made in schooling. All this imply that a more egalitarian distribution of education can become an efficient and very effective tool in reducing poverty and inequality in income distribution while at the same time ensuring sustained rate of growth in per capita income. According to Dennison (1962), education contributed to the growth of output and income by raising the quality and productivity of labour force, thus “accelerating the rate at which society’s stock of knowledge builds up; leading to the application of science and technology to the production process through innovation and research.”

2.4. Education, Human capital and Human Development

The concept of ‘Human Capital’ introduced by Nobel Laureate, T. W. Schultz (1960), and further elaborated by another noted Nobel Laureate, Gary Becker (1962), treat investment in education, training and skills development as important as investment in other physical capitals. This was an important step forward in understanding the key relationship between education and economic development. Economists in the tradition of Shultz perceived human resource “as a form of capital, developed through schooling
and specialized training... and utilized, together with co-operant factors, in the production of goods and services” (Inone, and Izawa, 1978). These economists, thus, viewed human resource as the active agents that constitute the ultimate basis for the wealth of nations.

The notion of human capital is identified as ‘the sum total of the knowledge, skills, and aptitudes of people inhabiting a country’ (Shultz 1961, Becker 1975). Mehta, (1976) in his book titled, ‘Human Resource Development Planning’ describes human capital in a broader sense to include the initiatives, resourcefulness, capacity for sustained work, right values, interests and attitudes and other human qualities conducive to higher output and accelerated economic growth. According to Richard Blundell et. al (1999), it has such components as “acquired or innate early abilities; qualifications and knowledge acquired through formal education; and skills, competencies and expertise acquired through training on the job.” Even as the acquired and innate abilities vary from individual to individual, human resource development is realized through diverse means; the most obvious among them being education - both formal and non-formal. Thus, the amount of education acquired has an important impact on the productivity of individuals, their earnings and on the overall development of the society because the more education individuals acquire, the better equipped they are to absorb new information, acquire new skills, and familiarize themselves with new technologies. This enhancement of human capital, not only increase the productivity of their labour and of the capital they use at work, but also frees up resources to create new technologies, new businesses, and new wealth that eventually result in increased economic growth. This then is the most direct way in which education affects the economy.
The core of the ‘human capital theory’ proceeds from the acceptance of the view that regards human resource as a form of capital and contends that its development is crucial as it has significant influence on the nature and quality of economic and social development. This notion proceeds from the understanding that a person has the potential to influence future income through the acquisition of knowledge, skills, aptitude, values, attitudes, initiatives and capacity for work all of which are the direct consequence of education. Accumulation of human capital, or in other words, human resource development takes place in several ways, the most obvious being formal and non-formal education. It involves the process of increasing the knowledge, skills and the capabilities of the people, achieved through education and skills training. Education thus becomes a crucial factor in the development of a country. Therefore, Shultz (1981) observed that ‘investment in people and knowledge is a decisive factor in the development process of a nation and in securing human welfare.’ The importance of human resource development in the overall economic and social progress prompted the United Nations Committee for Development and Planning (UNDP) to impress upon countries to devote more attention to education and human resource development, especially, primary education, and ensure greater investments in efforts aimed at human resource development through its annual Human Development Report (HDR). It is in this context that HDR (1994) recommended setting up of global targets on issues like universal primary education and reducing adult illiteracy.

According to De Silva (1997), the significance of education and human resources development, quite obviously stems from the fact that in any economic activity it is the human element that commands, directs, organizes, controls and maximizes the factors of production. Frederick Harbison (1973), articulated the same thing when he said,
‘Human resources constitute the ultimate basis for the wealth of nations. Capital and natural resources are passive factors of production; human beings are the active agents who accumulate capital, exploit natural resources, and build social, economic and political organizations to carry forward national development. It is apparent therefore that a country that is unable to develop the skills and knowledge of its people and utilize them effectively in the national economy will be unable to develop anything else.’ Human resource development thus becomes the most important vehicle for development as it determines the character and pace of economic and social development. Bartel and Lichtenberg (1991) speaking of the implication of human capital development points out the fact that individuals who acquire more education are generally better equipped in absorbing new information, acquiring new skills, and familiarizing themselves with new technologies and are found to be in a better position to make greater contribution to the production process. The link is quite obvious: individuals with more education receive, on an average, more income and those with higher levels of schooling and educational attainment generally have higher levels of individual productivity and earnings (Mincer, 1974; Schultz, 1994, 1999).

By late 1950s, education and human resource development once again came to be viewed as an important and crucial agent for rapid economic growth of a nation (Chatley, 1995). But as Sianesi and van Reenen (2003) observes in their article, “The Returns to Education: Macroeconomics”, with the two main macro approaches of the ‘Augmented Solow Model’ and the ‘New Growth Theories’, the importance of human capital in general, and education in particular, came to greater focus only in the 1980s and 1990s. Distinguishing the role of education as a factor of production, and as a factor
that facilitates technology absorption and the production of knowledge is the significant difference between these two approaches.

The Solow Model or the expanded Neo-Classical Model as it is known, sees human capital as an added input and insists that countries that have faster growth rate of education will have faster growth rates and higher incomes. Human capital is seen here just as an ordinary input in production wherein the level of output depends on the level of human capital. In other words, the growth rate of output depends on the rate at which countries accumulate human capital over time (Lucas, 1988). The Endogenous Growth model or the New Growth Theory, on the other hand, sees education as a process that changes production technology itself, setting in motion the development of new technology, new products and new knowledge (Romer 1990; Aghion and Howitt, 1998; Nelson and Phelps, 1996). Here, human capital is viewed as the primary source of innovation, capable of increasing the capacity, both to produce technical change and to adapt to it. Education levels are thus linked to productivity growth. The returns to human capital accumulation, thus, depend on the successful introduction of and the effective adaptation to technological and organisational changes (Nelson and Phelps, 1966). In this model, education is subject to increasing returns, effectively reducing the diminishing returns of physical capital (Lucas, 1988). Thus, modern growth theory claims that human capital has a positive impact on economic growth. Although there are exceptions, as Temple (1999) in his work, ‘The New Growth Evidence’ claims, “evidences generally show that the quality of human capital has a statistically significant effect on the growth rate of per capita income.”

Recent analysis of the potential role of education in economic growth and human welfare by Barro (1991), Barro and Sala-i-Martin (1995), Lucas (1998) and others have
generated renewed interest in endogenous growth theory, now termed as ‘New Growth Theory’. It insists that education besides directly affecting economic growth by making individual workers more productive also cause the creation of knowledge and technological innovation through the process of education itself or by the development of new ideas and knowledge, thereby indirectly causing economic growth. Today, there is greater understanding of the linkages that exists between literacy, basic education, health, nutrition, sanitation, environment, population growth, change in technology, role and status of women, unemployment and a whole lot of other interdependent factors and sectors in the economy (Rao, 1996). As an essential and a decisive element in the whole process of sustained economic development and human wellbeing, human resource development is deemed, both as a means as well as the end, wherein developing people and their competency and ensuring their wellbeing is the essence and the goal of all activities, plans, policies and programmes.

The resurgence in the understanding of the significance of education and human resource development and its intermediary role in the process of technical transformation and socio-economic development, followed the realization that in the absence of a knowledgeable, skilled and efficient labour force and managerial talents, investment in physical capital alone was useless and yielded no good returns. This revival of interest resulted in a large number of new researches which Bowman (1966) rightly described as, “the human investment revolution in economic thought.” It is now widely accepted that development of human capital has an important and strategic role to play in achieving accelerated and self-sustained economic development. This increase in productivity frees up resources to create new technologies, new businesses, and new wealth, eventually resulting in increased economic growth. Many economists
and policy planners today have their strong conviction in the primacy of education in the development process, a belief that stems from the fundamental role of education in income generation, as well as from the several other ways in which education promotes and sustains development. Prakash (1996) in his book, ‘Cost of Education, Theoretical Exploration and Empirical Prognostication’ enumerates the many ways in which education and efforts in human resource development contribute to sustained development:

1. development of conducive values, attitudes and rationale thoughts, that may facilitate moving from irrelevant and obsolete to the establishment of new order and socio-economic change;
2. equalization and distribution of income and wealth through equalization of opportunities, enabling upward movement of people belonging to lower income-occupation and social groups;
3. supply of qualified manpower to meet the human capital requirement in the economy;
4. generation of intermediate and final demand for the output of other factors which it uses as flow and stock input directly and indirectly;
5. creation of employment opportunities directly and indirectly; and
6. promotion of individual hygiene and public sanitation, family planning, nutrition, health and shelter.

In the technology driven economies of today, education is becoming increasingly more important because the pace at which education and training transmit knowledge and skills directly affect the pace of development. This recognition of increased importance of education has caused many countries to lay greater stress on their educational systems and augment the investments made in it. The case for human resource development, thus, emerge from the fact that capital and natural resources are only passive factors of production that require the active intervention of human factor in their accumulation, exploitation, and organization. As far as the society is concerned, it is the ability of education and human development to influence many inter-dependable variables in the economy that makes it a great investment proposition. Besides
increasing productivity and earning capacity, education and human development ensures political and social empowerment; provide enhanced capacity to people to participate in community governance. Education is also accepted as a powerful instrument that can be credibly employed to achieve more equitable distribution of income and to break the poverty cycle. Apart from all these, wide range of externalities flow as a result of investment in education. Expanding girls’ education, for example, has a positive effect on fertility, infant mortality, nutrition, and enrolment rates of the next generation. Likewise, it reduces child labour and exploitation of children that are prevalent in many poorer areas. Studies reveal the existence of a two-way interface between economic growth and human capital accumulation. A higher level of economic development is responsible for higher level of human capital formation. At the same time, a higher stock of human capital makes it possible for the economy to achieve higher rate of growth. Thus, investment in human resources is known to promote economic growth, while in many ways it is a country's economic capacity that determines its ability to invest in its human resources. In this sense, "A good educational system may be the flower of economic development, but it is also the seed" (UN, 1963).

The World Conference on Education for All (Jomtien, 1990) listed some of the assured benefits of basic education. Among other things, they include six benefits:

1. improvement in the productivity of workers;
2. acquisition of necessary skills for self-employment and entrepreneurship;
3. higher earnings and income; informed consumption choices;
4. improved household management;
5. increased farmer productivity through the adoption of better technology; and
6. knowledgeable use of credit and better knowledge of marketing systems.
Besides these, increase in literacy is found to influence a number of socio-economic factors such as investments and output per worker; life expectancy; infant mortality; knowledge and reasoning ability; social and economic disparities; health-care and sanitation; empowerment of women; cultural understanding within and between nations; social and occupational mobility and access to new information and markets (Rao, 1996).

With the decisive role it plays in an individual’s life, employment and earning and its significant influence on various socio-economic factors in the economy, education and human resource development is considered as an indispensible component of basic “human right”. The Universal Declaration of Human Rights adopted by the UN General Assembly in 1948, the UN Declaration of the Rights of the Child 1959, the International Covenant on Economic, Social, and Cultural Rights 1966, the Convention on the Elimination of All Forms of Discrimination Against Women 1981 and the Convention on the Rights of the Child 1990 were all attempts to appreciate and give credence to this basic fact.

These were all path-breaking and important affirmations on the importance of education as an essential aspect of growth and progress. Besides providing equal opportunity for all, it was expected that education would lead to ‘the full development of human personality’ (UN, 1948) and benefit not only the individual, but also the entire human society. Championing the right to education, the UN Declaration insisted that it is made ‘free, at least in the elementary and fundamental stages’ (UN Press release, 1999). Considering the significance of education, especially that of the basic education and its influence on the overall development of the social, cultural and economic progress of the human society, the Declaration went a step further and called for making it
compulsory for all. The decision at the World Conference on Education for All (1990) in Jomtien, Thailand, to include ‘training and skills development’ in the standard definition of ‘basic education for all’ and to make ‘technical and professional education’, ‘generally available’ to all was equally important and momentous as they underlined the importance of technical education and training.

In India, by making elementary education an essential element of Fundamental Right and committing 6 percent of the gross domestic product, of which 50 percent is set aside exclusively for primary education, India pledged to ensure the benefits of education is made available to all. The newly enacted Right to Education Act, 2009 while providing free and compulsory education to the children of age six to fourteen years and seeks to improve the quality and reach of education for the economically and socially backward population. Besides having a direct impact on economic growth, education is found to be associated with diverse socioeconomic factors that significantly affect growth such as better public health, better parenting, lower crime, a better environment, wider political and community participation, and greater social cohesion. Moonis Raza, et al. (1986), in a study based on data collected from 30,000 rural households in 245 randomly selected villages located in Tumkur district of Karnataka found the important role education plays in the socioeconomic transformation of households and the country.

The influence and effects of Education and Training on farm productivity and farmers' earnings and has been the subject of much research. Micro-level analysis by Nautiyal (1985), in a study titled ‘Economics of Rural Education in Western Uttar Pradesh’ found a distinct and positive relationship between education and agricultural development; and earnings and educational attainments, irrespective of caste and sex.
This corroborated by the World Bank Report, (1980), which insists that in conditions ‘where the complementary inputs required for improved farming techniques were available, the annual output of the farmer who had completed four years of primary schooling was on an average 13.2 percent more than one who had not been to school. As expected, where the complementary inputs were not available, the increase in output resulting from additional schooling was on an average smaller, but still substantial.’ It suggests that even a primary school education of one or two years or even appropriate short-term training of the one involved in agriculture can make much difference in agricultural productivity. Panwar (1978), who on the basis of his study of short-duration agricultural training on farmers’ earning, concluded that even a short term programme like a five-day training is likely to lead to a significant increase in the functional knowledge of farmers, leading to significant changes in their attitude and farm practices as well as their earnings.

Jamison and Lau (1982) too found it true in their comprehensive study where they reviewed previous works on education and agriculture, and analyzed large volumes of data-set from Thailand to conclude that even primary level education has positive effects on agricultural productivity. Literacy having a very substantial positive impact on labour productivity in agriculture was found to be true in a study by Saxonhouse (1977). Other studies, like the ones by Bessen (2003); A'Hearn (1998) also came up with the conclusion that as far as the effect of literacy and training is concerned in agricultural practices, production and the resultant income. Foster and Rosenzweig (1996) obtained same results in India where they found that the returns to primary schooling increased during the period of rapid agricultural progress called the “green revolution.” Their study revealed that farmers who had some level of education were
more skilful in adopting the new seeds and employ new methods thereby reap greater benefit than those who had no such education.

Murgai et al. (2001) who conducted their studies in the green revolution regions of Pakistan and India also found that increased schooling improved the productivity of farmers as well as helping them to acquire the required knowledge about preventing resource degradation. Likewise, Alderman et al. (1996), too in their study of the rural labour markets in Pakistan, found support for the productivity enhancing role of primary education in the largely agricultural rural setting of Pakistan. This view is also shared by Joliffe (1998) who used the household survey data from Ghana, to show how primary education increases household income from non-agricultural employment, even though it does not necessarily raise farm productivity. But here the traditional method of agriculture still practiced widely in Ghana is seen as the main reason why the benefits of basic education cannot be realized in agricultural production. However, Rosenzweig (1995) in an article published in American Economic Review titled, ‘Why are there Returns to Schooling?’ maintains the view that agricultural tasks primarily involve physical exertion and no big difference in productivity is evident between workers according to their education levels, except in some complex situations. This position is stoutly contested by many others who do not subscribe to this view.

Education has a positive effect on productivity among farmers using modern technologies, but less impact, as might be expected, among those using traditional methods. In Thailand, farmers with four or more years of schooling were three times more likely to adopt fertilizer and other modern inputs than less educated farmers (Birdsall, 1993). In Nepal farmers who completed at least seven years of schooling had achieved considerable increase in the productivity of wheat and rice (Jamison and
Moock, 1994). Poverty is increasingly seen, both as a cause and effect of insufficient access to quality education. It is quite clear that children of poor families are less likely to attend school and complete schooling because of the associated costs of attending school, even when it is provided free and increases the likelihood of abandoning school. Not joining or dropping out of school because of poverty only ensures perpetuation of the poverty cycle. Lack of education thus perpetuates poverty, and poverty hinders access to schooling. Eliminating poverty therefore necessitates providing access to quality education. Education today is effectively used as a strategy to fight poverty by many developing countries. Appleton, (1997) asserts that each year of primary schooling is associated with a 2.5 percent fall in the risk of poverty. It is because the educated people are in a better position to improve the quality of their lives as they acquire higher income earning potential and are less likely to be marginalized in the society.

Crucial decisions related to poverty conditions such as utilization of income, health, mortality, fertility, housing conditions, and recreation etc., are positively influenced by education (Blanca Zuluaga, 2010). Thus, education people acquire besides significantly influencing their ability to acquire higher wages and income also helps them make better decisions a far as escaping poverty conditions are concerned. On the other hand, lack of education can contribute to perpetuating poverty conditions, triggering off a phenomena where one prop up the other as poverty act as a major factor that prevents people from getting access to education. Besley and Burgess (2003) reviewing the prospects of reducing poverty by half as part of the Millennium Development Goals concluded that human capital development must be seen as an essential part of a successful strategy to achieve this goal. Without adequate priority given to education,
no country has ever emerged from poverty. It is because education has the potential to enhance the skills, productivity and earning capacity of poor households, helping them to move out of the vicious cycle of poverty breeding poverty. That is why in education assumes great importance and investment in it is seen as a proven poverty reduction strategy. Education is therefore an essential and useful agent in bringing about improvement in the socioeconomic status of individuals, groups, communities and sections of the society that suffer from socioeconomic deprivation. The relationship between education and poverty is a circular one: the lack of education force poor to limit themselves to low-productivity activities resulting in poverty. On the other hand, poverty leads to low investment in education. That is why human capital formation has long been recognized as an effective tool for reducing poverty in the long run (Schultz, 1961; Bils and Klenow, 2000; Krueger and Lindahl, 2000).

**Concluding Remarks**

The literature reviewed in this chapter and the first chapter clearly point to the existence of a strong, empirically verifiable and positive relationship between educational attainment and the earning capacity of the people. A wide array of both theoretical as well as empirical literature speak of a extensive range of economic and social reasons for associating education with growth. These insist that private as well as public investment in education and human development has its inevitable influence on earning capacity and economic growth. The large number of empirical studies irrefutably proves this. It is abundantly clear that investment in education and training is the crucial starting place to increase individuals’ and society’s capacity, both to produce technical changes through innovation, and adapt it to everyday life leading to prosperity and
growth. The existence of various ‘spill-over-effects’ of education and training and the significant contribution they make in providing sustaining growth, economic and social well-being are noteworthy. The literature reviewed also point out that education or lack of it has the potential to affect a large number of socio-economic and developmental variables in the economy. They underline the importance of quality and equality of opportunities for education and human resource development.

These studies also emphasize the importance of investment in early years’ education for personal growth and development and speak of the advantages that the educated have over the less educated in improving quality of life and in determining, to a great extent, one’s social and economic status. The varied attributes that the educated people acquire through educations and training enhance their value in the job market and make them more suited for employment and eligible for higher wages. Thus, the many empirical studies and the literature available suggest that investment in education and human resource development is an important and indispensible pre-requisite for increased earning, economic empowerment and improvement in the quality of life. In the backdrop of this chapter and the first chapter, from the next chapter onwards take up the analysis of empirical data from Meghalaya.