CHAPTER - II

REVIEW OF LITERATURE - THEORETICAL AND EMPIRICAL PERSPECTIVE

2.1 Introduction

Education is recognized as a critical input for the holistic development of the economy. Further, the elementary education plays a very leading role in acquiring larger positive externalities to the society. The provision of elementary education is one of the central responsibilities of the government. Many economic theories also suggest substantial role for the government in providing of basic education.

All states in India have undertaken the responsibility of providing elementary education to their citizens. Voluminous government expenditure was increased on education across the states, but there is no significant achievement among the states in terms of educational outcomes. This chapter makes an attempt to review the available literature to understand the theoretical concepts, its interlinkages with development and problems involved.

Review of literature is divided into two parts. The first part represents the theoretical literature on financing of education, public good discussion, externalities involved with education and government intervention in the provision of education in the system. The role of education in economic development and important factors influencing on productivity and externalities involved also discussed here. The second part describes empirical studies on relationship between education and economic growth, inter-state variation in educational performance, efficiency of education system and factors influencing educational expenditure.

2.2 Theoretical Models of Public Expenditure on Education

Finance is commonly referred to as providing funds for commercial activities. Public finance includes both public revenue and public expenditure, which plays an important role in influencing the other variables in an economy. Public expenditure is referred to as the expenses incurred by the Government for the maintenance of the government responsibility and to stimulate the welfare of the society. Financing is an
economic activity of the government to provide and manage necessary resources for satisfying the needs of the people. Education is not a pure public good, because in certain situations education might violate the principle characteristics of the public good such as non-rival and non-excludability. But education in general or elementary education in particular is considered as social good or collective good, which produces various positive externalities and social advantages to the society.

Several economists have supported public expenditure on education for providing better educational opportunities in the society based on the argument that expenditure on education impacts economic development positively.

During the ancient period most of the countries were following the *laissez faire* policy, where market forces play dominant role in adjustment of the economy. The role of the state was limited. Even under laissez-faire policy, the Government was expected to perform certain functions.

According to the father of economics, Adam Smith (1776) who provided a broad platform to laissez faire policy, the government has three important functions. They are

- Protection of society from foreign invasion.
- Maintenance of law and order and justice in society.
- The correction and maintains of public works such as educational institutions for the instructions of the people.

Smith greatly emphasized the role of public finance and emphasized the need for providing public services to the poor to live and maintain their human dignity.

J.S. Mill (1848) is another well known classical economist supported Adam Smith's laissez faire policy in administration of the government. He purposefully divided the functions of the government in laissez faire into 'Ordinary' and 'Optional' functions. The ordinary functions are defense, maintenance of law and order and other functions essential for the maintenance of the system. On the other hand, the Optional functions such as education, health, family welfare and others have positive impact on economic growth the long run. In his argument he also encouraged government role in advancement of public expenditure because
1. Individuals are unable to evaluate the utility of certain goods,

2. Lack of foresight may prevent individuals from consuming the valuable goods.

3. Monopoly power or high prices necessitate government intervention in the provision of primary education.

**The Voluntary Exchange Theory** was developed by Eric Lindahl (1891). It suggests that the resources in public sector should be allocated in the same manner as allocation in the market with its price system. Through this theory they argued for tax collection and public spending for improving the welfare of the people.

For the first time Adolph Wagner (1835–1917) has commented on increasing state activities and through his experiment he found a positive relationship between public expenditure and economic growth among the selected countries. He postulated that when economy moves towards higher economic development path, public expenditure of the state also increases. The increasing public expenditure contributes to economic growth in various ways. In contrary, Peacock and Wiseman (1967) argued that the natural course of advancement and structural change in the economy leads to constant and systematic expansion in the public expenditure. According to them public expenditure in the system will not continuously increase. It depends on the shocks and stimulus response in the society.

**Bowen model (1948)** is related to public goods. According to him, if goods are consumed by people then they themselves should provide cost of the goods. Public good satisfaction will be differed from person to person. The person's level of satisfaction is the main determinant of public good satisfaction. In his argument for higher public good satisfaction he supported for government intervention in public expenditure.

**Samuelson's Theory of Public good**

The first place in defining the concept of public good belongs to Samuelson (1955). Samuelson was considered as the establisher of theory of public good. He distinguishes between public good and private good. The public good is a good, which brings benefits for members of the society as a whole and the consumption of the public good doesn't prevent the consumption by other person. In Indian context
provision of elementary education is a right of children between the age group of six to fourteen years. Therefore, elementary education is considered as public good. In this regard, Samuelson's argument in the provision of public good (elementary education) is justifiable.

**Dalton** postulated the public expenditure theory (1967) and according to him maximum satisfaction can be yielded by striking a balance between public revenue and public expenditure by the government. According to him economic welfare is achieved when Marginal Social Sacrifices (MSS) due to imposition of taxes is equal to Marginal Social Benefit (MSB) due to government spending.

**Public Expenditure and Decentralization**

Since the SSA adopted decentralized model in government spending on education, theories relating to the public expenditure, decentralization and governance are reviewed.

**Fiscal decentralization theorem (Oates, 1972)** - states that sub central governments have a comparative advantage in providing public services due to heterogeneity preferences of the people residing in different jurisdiction. He strongly argued for the decentralization in the administration and performing the functions. According to him decentralization will bring good governance at the local level and satisfy more human wants through effective public expenditure.

**Dreze and Sen (1989)** propounded public support led strategies. According to them the holistic development of the system is possible only where each and every individual has a good standard of living. For better standard of living and for taking number of activities, they strongly argued for the educational attainment. Apart from its intrinsic importance, education serves certain instrumental roles in ensuring the freedom of a person, which not only guarantees personal gains but also possesses social ramifications including empowering the disadvantaged and reducing inequality. Certain public service such as education, health, sanitation, family welfare, rural development and others are required particularly for the development of marginalized sections. In this regard, the government investment on social sector is essential for receiving the double benefit to the economy.
Milton Freidman (1995) in his book entitled 'The role of government'; in that book he postulated the role of government intervention in the provision of education. He positively argued that the government intervention in public good based on strong following reasons:

1. Capital market imperfection
2. Incomplete infrastructure
3. Possibility to create a monopoly
4. Existence of positive externalities

**Contribution of Education to Economic Growth: Theoretical perspective**

The role of education in development has been recognized since the days of Plato. He argued that the education has high economic value; therefore a huge part of community's wealth must be invested on education. Education helps the society by enabling citizens to participate actively in the development process.

But, a major contribution to the discussion on relationship between education and economic growth was first made by Adam Smith (1776), followed by the subsequent contributions by the classical and neo-classical economists until Alfred Marshall. Marshall (1890) emphasized that, “The most valuable of all capital is that invested in human beings”. Further he also stated that,” Knowledge is our most powerful engine of production. It enables us to moderate nature and force her to satisfy our wants”. Education is one of the most important components in capacity building. It provides a base for making a person capable of acquiring skills and becoming self-sustainable.

The significance of an adequately educated and technically trained manpower has been specifically recognized in economic literature since the middle of fifties when research studies in the economics of education and growth, pioneered by endogenous growth models propounded by Solow (1957), Schultz (1961), Denison (1962) and others. They highlighted the role of the ‘residual factor’, which mainly implies technology, learning, education and health

There are some arguments for the complementarity in public and private expenditure on the grounds of equity. The benefits that accrue to the individual in terms of higher earnings are a reason why the individual should pick up a part of the
cost. If we look at the state as a supplier of education and the individual as a buyer of it, then investments by both appear to be complementary; and this may be the best model on grounds of equity. Hence, the right balance between public and private expenditures is crucial to the success of any educational policy or programme (Psacharapoulos and Woodhall 1985).

2.3 Empirical Studies

Available literature on empirical studies is classified into different sections based on their content;

1. Contribution of education to economic growth and development
2. Trends in public expenditure on education
3. Development of educational expenditure in India
4. Efficiency, accountability and transparency in educational expenditure

2.3.1 Contribution of Education to Economic Growth and Development

Many theoretical and empirical researchers have been undertaken to understand or test the relationship between education and economic growth. Although many studies have shown positive relationship between these two, a few of them found negative relationship. Even enough more studies have confirmed positive relationship, due to difficulties in measurement of education it is not rightly defined. The effect of education is stronger on Less Developed Countries (LDCs) rather than Developed Countries (DCs). Education directly and indirectly contributes for the holistic development of the nation and leads to growth of the nation.

Bowman and Anderson (1963) analyzed the relationship between literacy and economic development. According to them, literacy contributed significantly to economic growth. About 40 per cent of adult literacy rate was a necessary, but not a sufficient condition for an economy to reach a GNP per capita level of US$ 200 during 1951 period and it was only when literacy rate exceeds 80 per cent, that GNP per capita could cross US$ 500. Further they also found that the primary enrolments in 1930s had a substantial explanatory impact on income levels after 20 years, i.e., in 1955.
Curle (1964) has studied education, politics and development. He correlated educational indicators in 1950s and per capita income of 50 countries during 1954-59 and found a correlation coefficient of 0.53 between GNP per capita and percentage proportion of Gross National Product (GNP) invested in education and 0.64 between GNP per capita and post-primary enrolments.

Factor endowments and per capita income differences among countries was studied by Krueger (1968) who attempted to compare the difference in per capita income between the United States and a wide range of other countries. She used the technique of breaking down the labour force by age, education and rural-urban areas for each country. This study found that other countries would attain a per capita income only half that of the United States level, with the balance being attributed to the different levels of development of human capital.

Dholakia (1974) made an attempt to identify the source of economic growth in India. In his study he estimated that the contribution of education to increase productivity, improve quality of labour force and to enhance economic growth in India is substantial. He found that the relative contribution of education to increase in productivity per person to be as high as 14.01 per cent during 1948–49 to 1968–69 and 0.36 percent of improvement in quality of labour force was attributable to education during the same period.

Razin (1977) studied economic growth and education. He analyzed the data for eleven countries during 1950s and 1960s and found a positive correlation between the percentage of population aged between 15-19 enrolment in secondary education and per capita income. Finally, the study suggested that an increase in the percentage enrolment in secondary education would lead to an increase in the rate of growth of national income.

An examination of basic issues of financing the education was carried out by Jallade (1979). He made an important observation that public financing of primary education has a strong and positive effect on the distribution of income in favour of the lower income groups.

An empirical study on human resource development and economic growth in developing countries was carried out by Wheeler (1980). He used simultaneous
equation model for 88 developing countries with the time period of 1960-63 and 1970-73. He found that education, literacy and nutrition contributed to growth of output directly and indirectly by increasing the rate of investment and by lowering the birth rate. There is a positive relationship between manufactured export growth, health and education.

Tilak (1986) studied education in an unequal world, using a linear regression model. This analysis of the relationship between education and economic development in 75 countries of the world classified the countries into very poor, poor, rich and very rich countries. In the group of very poor and rich countries education had a positive and significant relationship with economic development but in poor and very rich countries the relationship between the two was found to be positive and statistically not significant. Primary and secondary education was significantly related with economic development in the very poor countries. On the other hand, in rich countries it was secondary and higher education which had significant impact on economic development. In both poor and very rich countries only secondary education was found to have some impact on economic development of the nation.

In a study of 17 major states of India, Zaidi (1988) explored the relationship between economic development and educational attainment. He measured economic development in terms of per capita income, and educational attainments in terms of literacy rates, enrolment at primary and middle levels and per capita expenditure on education. The trend observed was that prosperous states were educationally advanced while poor states were not with the exceptions of Karnataka, Kerala and Tamil Nadu. He observed positive correlation between per capita expenditure on education and economic development. Thus, the study concluded that generally states having higher levels of income also possessed higher levels of educational attainment, but the states having lower income did not necessarily have lower levels of educational attainment.

Tilak (1988) estimated the relationship between education and economic development by using data of 100 countries for vocational secondary education vis-à-vis general secondary education with the help of a semi-log regression model. He classified the countries into low income, middle income and high income countries using one year, 10 year and 15 year time lag on enrolments. He found that vocational
education contributed positively to economic growth but this is only in the case of middle income countries. In low and high income countries the contribution of vocational education turned out to be negative and statistically insignificant. He has concluded that vocational education could contribute positively and significantly to economic growth of those countries which have GNP per capita more than US$ 400 and less than US$ 5000.

Illhan (2001) studied the role of education in economic development and presented a theoretical perspective. He argued in favour of the importance of education in the process of economic development with a theoretical framework. It was theoretically explained how education provides multidimensional benefits to individual and society as a whole and affects people’s productivity, health, trade, business and income distribution. He argued that education improves the standard of living of the people and it creates a multitude positive remuneration for family including better family health and nutrition, improved birth spacing, lower infant and child mortality and enhanced educational attainment of children. Moreover, the volume of both domestic and foreign investment is likely to be larger when a system’s human capital supply is more plentiful. It also evaluated that the earlier reviews of knowledge accumulation influence a country’s trade performance and competitiveness. This study found that the quality of education is poor at all levels in developing countries. Students in developing countries have a lower mean of achievement and their performance shows much greater variation around the mean. He suggested that education is also an important contributor to increase productivity of agricultural sector and to technological capability and technical change in industry. This study concluded that a balanced education system promotes not only current but also future sustainable economic development.

An empirical study (Babatunde and Adefabi, 2005) investigated the long run relationship between education and economic growth of Nigerian economy using econometric applications of Johansen cointegration technique and the vector error correction mechanism. Result revealed that there is a long run relationship between enrolments in primary and tertiary level as well the average years of schooling with output per worker and economic growth. Further it revealed that a well-educated labour force influenced a positive and significant impact on economic growth through
factor accumulation and on the evolution of total factor productivity. The study gave an important policy suggestion that the policy makers should concentrate on increasing the level of human capital to achieve rapid economic growth of the country.

Kaur (2006) tested the hypothesis that knowledge and skills embodied in human beings directly raised productivity in all sectors and increased the economy's ability to grow and adopt new technologies. The study examined the impact of different levels of education on the economic growth of 17 major states of India for the period 1999-2000 through regression analysis. The study concluded that educated workers were likely to obtain more financial benefits than the uneducated ones as these workers generate more value additions. The evidence from the study was found to be consistent with the view that measures aimed at increasing the quantity and quality of the stock of human capital should be an important part of any growth promoting policy package. Inclusive growth is regarded as the new mantra of development.

Tilak (2007a) critically viewed the approach to the development of education outlined in the approach to the eleventh five-year plan and highlighted the weaknesses and criticized the continuation of the big policy gap. He found a lot of contradictions in the approach paper viz., lack of vision for development of education and absence of a critical outlook of the strategies required. It did not focus adequately on the alarming and widening inequalities in education, at social, economic, gender and regional levels to propose clear strategies of developing an equitable system of education. According to him, equity was not the main concern of the approach paper, it was quality that occupied the attention of the Planning Commission and the commission assumed that quality would automatically promote equity.

Dastidar (2008) has made an attempt to review the available theoretical and empirical studies conducted on the relationship between public education expenditure and economic growth in the Indian context. He proposed that whether education expenditure should speed up economic growth. However, education is a necessary but not sufficient condition for growth and there are certain other factors also such as the country’s institutional structure, which determines whether investments in education sector will affect growth significantly. He observed that policies such as
trade liberalization seem to play a vital role in increasing the efficiency of education investments.

Education and economic growth of India was explored by Pradhan (2009). He attempted to trace the causality between economic growth (GDP) and government expenditure on education in India. Period from 1951-52 to 2001-02 was considered and employed some econometric tools such as cointegration test and Error Correction Mechanism (ECM). The estimated result suggested that there is a cointegration between economic growth and expenditure on education and it found a unidirectional causality from economic growth to education. But it was unable to find reverse causality from education to economic growth. This study has suggested that great effort is needed to enhance the Gross Domestic Product (GDP) in the economy through investment on human capital generally and education particularly.

An econometric analysis of government expenditure on education and economic growth (Chandra, 2010) tested a causal relationship between education investments and economic growth of India for the time period of 1951-2009. Using linear and non-linear Granger causality method for analyzing the data, he found a bi-directional causality between education spending and GDP in India. The study concluded that economic growth affects the level of government spending on education irrespective of any lag effects, but investments in education also tend to influence economic growth after some time-lag.

Beskaya et al. (2010) investigated the relationship between per capita economic growth and per capita school enrolment variables. The study proved the long-run relationship between per capita real income and school enrolment variables. On the basis of result, it suggested that per capita real income has been an important variable in explaining per capita high school enrolments in the long run. A unidirectional short-run Granger causality between per capita enrolments in primary and high school to per capita secondary school enrolments is observed. The important policy recommendation of this study is, schooling should be conducted to expand the quantity as well as to improve the quality. Therefore implementation of eight-year mandatory primary education and new programmes of education establishment in Turkey may positively contribute to the country's long-run economic growth.
2.3.2 Trends in Public Expenditure on Education

Trend shows the status of a particular variable and how a variable increases or decreases in a particular time. Trends in public expenditure on elementary education reveal the government's commitment over a period of time in educational expenditure with strong pressure from international organization to achieve the committed goals, national goals and more importantly the commitment to the Indian Constitution, which embodies providing free and compulsory education to all children in the age group of six to fourteen years. Studies on expenditure trends in education provide information about the education system and its goals and expenditure size, growth size and policy response in a particular country.

Expenditure on Education: Statistics and Comments (Edding, (1958) estimates the expenditure on education over the years. It was found that education appeared to have a rising share of the national income in most countries and also several interconnected reasons for the increase in expenditure on education.

Lewis and Martin (1956) made an international comparison of expenditure on education as a proportion of public expenditure. They have drawn attention to the difference in percentage of national income devoted to public expenditure and the difference within the public expenditure sectors of the proportion devoted to education.

Education Commission (1964-66) made a fairly exhaustive study of the problem of financing education and presented a detailed analysis of different aspects of educational financing. The report of the Study Group on Resource Mobilization for Education of the Government of India, published by the Asian Institute of Educational Planning and Administration (1970). After examining the educational expenditure by sources, this study recommended the levy of betterment fee and education cess in all states as resources for education.

Vaizey (1966) employed various criteria to find out the impact of public expenditure on education namely, expenditure on education as a percentage of total public expenditure, expenditure on education in relation to other outlays and percentage of GNP provided by different countries to education and expenditure among various levels.
Vaizey and Sheehan (1968) pointed out the dramatic changes that happened in the British education system and indicated the true trends in educational expenditure in India from the period 1920-1965. They observed that the share of educational expenditure in the country’s GNP increased from 2.5 per cent between the two World Wars to five per cent in the mid-1960s. During the same period, the educational expenditure in total government expenditure just increased from 13.5 per cent to 18.9 per cent.

Pandit (1972) studied the progress of expenditure on school education as well as trends in the share of private and public resources and it also analyzed the growth of public expenditure on elementary education using national income, government budgets, and others. He found that education sector has to compete more for resource allocations with other development sectors namely, health, irrigation, power, sports and infrastructure in central as well as state budgets. The competition also exist within educational sector, primary education will have to compete more with the secondary education, technical education and higher education. The share of public expenditure on education has been decreasing continuously while private share is also limited. Considering this problem it was suggested that better management techniques and public support are required to reduce the cost and increase the growth of primary schools.

Panchmukhi (1975) made an attempt to analyse of category wise expenditure of various sources of financing higher education. He found that the student fee and funds were the major source of financing, although its proportion was continuously decreasing with increase in the government’s contribution to education. The study also recommended that the government should minimize their role in financing except to the necessary extent and suggested that fee rates should be increased to cover the cost of education.

Financing pattern of the Andhra University was studied by Subrahmanyan (1982). However, across the non-academic income sources, major contributors were the press, publications (a collection of written texts) and interest on corpus fund. He found that its major sources of income (60%) were the internal sources. Within that, major proportion of funds was consumed by the teaching departments (40% to 69%). It was further noticed that there exist larger differences in the non-tuition components.
of cost on per-pupil basis rather than in the tuition cost of the students belonging to the different income strata of the society.

An empirical analysis of distribution of education among different income groups was carried out by Dasgupta (1983) et al. This study is based mainly on primary data, collected through socio-economic survey of West Godawari district of A.P. It used two criteria namely House Hold Income (HHY) and House Hold Per Capita Income (HHPY) for testing the hypothesis that the distribution of education is egalitarian in nature. Based on the results it concluded that the distribution of primary education was clearly egalitarian, secondary education was fairly egalitarian whereas higher education was positively correlated with income level. The same pattern was applicable to distribution of public expenditure on education by the state.

Padmanabhan (1986) studied regional disparities in educational financing by analyzing educational expenditure incurred by different states of India. He argued that disparities in educational financing would deprive opportunities for the disadvantaged sections of population and thereby slow down the well-known social objectives of the state.

Tilak (1988) discussed the importance of foreign aid for education. He observed that most of the developing and less developed countries suffered from scarcity of resources in terms of financial and physical requirements. They were unable to invest on education even less than two to three per cent of their GDP. Under such circumstance foreign aid can supplement the country to meet basic education programmes. Moreover, he critically analyzed the trends of foreign aid and impact of aid on Indian education. He suggested that the direct or indirect influence of donor (aid) agencies on local educational plans, programmes and policies should be stopped completely and agencies should not intervene in aided countries local sovereignty. Important suggestion of this study is that the aid should help the poor people of that country. An Important observation is that multilateral agencies extended rationalized distribution of aid based on efficiency and equity but bilateral aid is based on political, historical, military and other factors.

Upendranath (1992) examined the growth of educational expenditure in the state of Andhra Pradesh. He observed that the pattern of educational expenditure in the
state has been similar to that followed in many states and the all India pattern, with higher education taking precedence over primary education. Andhra Pradesh stood below all India average in terms of budget allocations and sectoral distribution of funds on different sectors within education. Further, he dint observe any distinctive shift in the expenditure on different sectors within education. The share of primary education in total has improved slightly from 43.94 per cent in 1977-78 to 47.19 per cent in 1987-88. Andhra Pradesh spent comparatively less on education among the southern states and the share of higher education in total educational expenditure was also lower in the state than the other states.

The importance of education as an investment for national survival (Tilak, 1997) is observed the pattern of financing education in India during the 50 years of Indian independence. The results of the study show that the expenditure on education in India increased remarkably and its relative share in the total government expenditure also increased from less than 40 per cent at the time of transfer of power from colonial rulers to independent government in India to more than 85 per cent in the recent years. Concurrently, the shares of all other non-governmental sources declined steeply. The significant growth of public expenditure on education and the consequent relative decline in the share of fee and other non-governmental sources was a deliberately selected policy after independence. The study concluded that the policy should improve accessibility to education at all levels.

The role of state and local bodies in financing education in Tamil Nadu was studied by Arumugum (1999). The study aimed at estimating the resource flow from state to local bodies. The local bodies could also mobilize resources for education in their jurisdiction. The study used economic-cum-functional classification method instead of the usual budget method to estimate the resource flow. The former method is more worthy than latter and the urban local bodies mobilized resources through education tax and also received grants from the state government but very small percentage was spent on education and major part was used for the provision of other services. It was suggested that the urban local bodies made a series of efforts for augmenting resources and state government can reduce its assistance to urban schools. This can help in raising resources to rural schools.
Kamaiah and Rao (2000) utilized the pooled data for 15 large Indian states from the period 1992-93 to 1997-98 and employed panel data models to estimate the normative levels of expenditure on primary, secondary and higher education. The findings of their study were consistent with the generally maintained hypothesis that the rich states spend more and poor states spend less in social sectors. Gujarat and Maharashtra emerged as champions of the cause of primary education, whereas Andhra Pradesh and Punjab spent substantially more on secondary and higher education. Further, poor states like Uttar Pradesh and Bihar were found to be lagging far behind the normative levels for all the three expenditure heads. The study suggested that the unutilized capacity in both primary and higher education could be attributed to the shift in preference from government education to private education.

Debi (2001) reviewed the experiences of financing of elementary education of Orissa state. The study highlighted the issues/patterns and allocation of resources to education of the Orissa state and observed that the pattern of allocation of resources on elementary education remains far from satisfactory. It was recommend that the state, it need a proper mix of private and public sector financing of education at the elementary level to achieve the goal of UEE.

Reddy and Rao (2003) examined the progress and constraints of Primary Education. The study made an attempt to examine the various aspects of education viz. literacy rate, rural-urban disparities, gender and social disparities, density of primary schools, enrolment vis-à-vis dropouts and expenditure on education in the state of Andhra Pradesh at a disaggregate level with a view to pinpoint the causes for its poor performance in primary education. It found that the existing funds from different agencies are not enough to elementary education. It was suggested that the collection of education cess from the people is necessary to augment the financial resources for funding elementary education.

Tilak (2003) studied privatization of higher education and he attempted not only a descriptive and analytical review of major issues relating to public expenditure on education in India, but also highlighted a few important policy implications for the improvement of education system in India. He observed that the constitutional directive of UEE in India, which was given timeframe four decades ago was still not achieved. Secondary and higher education systems were also associated with several
problems especially scarcity of funds that is more important than others. Though huge investments were made in education in the post-independence period, they were not found to be adequate to meet the targets of providing quality education to the children. As a result, five decades remained a period of under achievement in education. This study concluded that the pattern of allocation of resources to education and allocation of resources within education remained far from satisfactory, judged in terms of adequacy, efficiency and equity.

Mehrotra (2004) investigated the scope for reforms in the pattern of education spending and considered ways to mobilize additional resources for elementary education, including earmarking funds to this sector. The study emphasized the enormously high share of total elementary education spending on teacher salaries and the bias in favour of secondary education with regard to public education spending of many states. All of these were found to have serious consequences for both the efficiency and equity of public education spending. The study suggested new taxes and the earmarking of funds from such revenues for elementary education, both at the state and central levels are very essential.

Tilak (2004) analyzed public subsidization of many social and economic services that are a common feature of most countries of the world. All levels of education are important and they are dependent upon each other. He argued that it may not be logical to withdraw subsidies from one level of education and allocate in favour of the other, as all levels of education in India are severely under-financed. Regarding the recent trends in public expenditure on education during 1990s, the study found that public expenditure on education has declined from above four per cent of National Income in the late 1980s to 3.6 per cent in the late 1990s. Elementary education is nearly totally financed by the state. The government subsidies in higher education are being reduced as many universities are experimenting with the cost recovery measures, generating resources from student fee and other non-government sources. The study reviewed provides the distribution of some specific subsidies in education such as free education, fee exemptions, text books, noon meals and others. It also found that some of the specific subsidies in education are fairly progressively distributed.
Chakrabarti and Joglekar (2006) used state level data and empirically examined government financing of education in India over the span of 1980-81 to 1999-2000 across 15 major states of the country. Their main finding was that there was a structural break in the pattern of expenditure in pre and post economic reforms periods. Income with elasticity less than one was found to be significant and it enhances educational expenditure at aggregate level. Contrary to general perception, education expenditure at all levels has been significantly lower after liberalization vis-a-vis pre-economic reform era. This was particularly detrimental to the vulnerable sections of the population i.e. for women and backward social groups. The study concluded that even after controlling for the economic reform process, privatization exerted a negative significant impact on expenditure on higher education.

Public expenditure on education with respect to some selected issues was evaluated with evidence by Mukherjee (2007). He observed that the effectiveness and efficiency of resource allocation by the government has generated considerable debate, both from ideological and technical point of view. However, he acknowledged that there is a large scope for improvement in the level and quality of public-funded education. Important suggestion is that the new institutional arrangements are being designed to address the deficiencies in incentives and monitoring, thereby improving quality of elementary education.

Prakash (2007) examined the trends in the expansion of education and variations in participation across states, gender and social groups. He discussed the trends in the financing of education and the required resources to meet the target of allocating six per cent of the GDP to education. Study concludes that without appropriate policy interventions in school education, it would be of little use. Quantitative expansion and qualitative improvement of education should command highest priority in the policy discourse.

Trends and prospects in financing of secondary education in India were analyzed by Reddy (2007). This study argued that in the changing global socioeconomic context, the secondary education was acquiring the characteristics of pure public good in line with the elementary education. The study is based on selected indicators like public expenditure on education, secondary education expenditure as a proportion to GNP and the budget provisions since 1990s. Based on the results it was found that the
resources for secondary education were inadequate, even though it has more importance. The entire education sector suffered from dearth of resources and the priority given to it in public allocation was also declining. The growth rate of public expenditure on secondary education since 1990s was found to be much lower than that observed during the 1980s, with the exception of the second half of the 1990s. The per-student expenditure on secondary education in real terms was found to remain constant since 1990s. This study suggested that limited expansion had taken place with poor or even deteriorated infrastructural facilities during the concerned period.

**Anuradha et al. (2008)** analysed the recent trends and outcomes of public expenditure on education in India. The study highlighted major trends in public financing of education in India viz., expenditure by central government, state government, and other local bodies and NGOs sector. Study also included foreign aid. Study also finds that while expenditure in real terms increased during 1990s, it stagnated since then. Proportion of public expenditure on education had been less than four per cent. But there have been changes in composition and modalities of expenditure. However, it was also found that central government was playing very important role in state education finance. Centrally sponsored schemes are a critical part of the centre to state transfer. Moreover, the study used expenditure trends in seven states and explored the impact of expenditure on education outcomes and indicated that the recent changes of education expenditure of the less developed states improved the access, but retention of students and learning achievements remained very low.

**Reddy (2008)** examined reflection of the changing public policy in the era of liberalization on elementary education was examined. The impact of Liberalization, Privatization and Globalization (LPG) on education sector generally and elementary education particularly was examined. The priority accorded to education in general and elementary education in particular declined ever since the liberal economic policies were adopted. Furthermore, the adoption of social safety net for protecting and financing elementary education is not availed. The study found that per student expenditure on elementary education was almost stagnant since 1990. In terms of quality, the government schools show worst performance. The middle classes and
others are forced to look for alternatives and increasingly rely on private schools to educate their children. Unfortunately this poor quality of education does not reduce income equality, poverty and other problems, which are primarily interlinked with education.

2.3.3 Development of Educational Expenditure in India

A number of cross-country and inter-state studies examined the inequalities in terms of educational attainment, educational expenditure and educational outcomes. Various studies attempted to capture these issues and their results were not uniform because the nature and number of variables considered were different, the methods were different from study to study and the reference period was also not the same.

Psacharopoulos (1973) made an attempt to compare the rate of return to investment in education in 32 developed and developing countries. He compared private and social rate of return to education and the return to primary education (whether social or private) is highest among all educational levels. The study found that the return to education in developing countries is higher than the corresponding returns in more advanced countries. Further, there is considerable evidence that the investments in education in developing countries have gone up. This may be due to the belief of the government that education would promote economic growth and provide the skilled manpower needed for development.

Reddy (1977) used the taxonomic method to find out the inequality in educational development considering a number of variables, among them the literacy rate as a stock variable and enrolment ratios, percentage of girls and percentage of untrained teachers were as flow variables for educational development. Based on the findings it is concluded that the taxonomic method was useful in ranking, classifying and comparing the educational development of various states.

In a study of education and economic change in Kerala, Nair (1978) examined the influence of various socioeconomic factors on the process of educational development and the direction of their relationship. He evaluated the historical factors underlying the process of educational development in Kerala and compared the structural aspects of the educational system of Kerala with that of other states. A methodology for calculating effective cost of education at the primary stage was developed and used
for comparison. The main finding was that the economic backwardness of the state by itself need not hinder the progress of education. The educational development by itself played only a limited role as a facilitator for promoting economic equality, as educational expansion did not result in increasing employment opportunities or decrease in the differences in educational attainment among various socio-economic groups.

Education and regional development in India (Chaudhry and Nair, 1981) assessed the role of education in regional development in India. They study constructed an index of educational development and measured the regional disparities in educational development. It was found out that there is a positive relationship between education and economic development and concluded that as a social indicator, education could play an important role in reducing regional disparities.

Reddy and Reddy (1992) studied inequality of educational opportunity in rural areas. They focused on inequality in the utilization of opportunities to participate in education in rural areas of Andhra Pradesh. They examined the differences in gross enrolment ratios between different socioeconomic groups and sex. It was found that though sex discrimination existed irrespective of economic position, it was more predominant in poor families. The results also showed more disparities in higher education as compared to primary and secondary education. The study concluded that the inequality in education was not an educational problem alone; it is prevalent across the entire social, economic and sectors of the nation.

Investment gaps in primary education, a state wise study (Ramachandran et al. 1997) criticized earlier alternative estimates of the Finance Commission (9th Finance Commission) and Tilak and Kar's estimates (1994). Their study was mainly based on Colclough and Lewin (1993) methodology for calculating investment requirements to finance universal education and it modified the Colclough and Lewin method for estimation. The investment requirements for 17 major states of India were estimated using the data on unit cost of schooling and data on attendance in the place of past expenditure and official enrolment data respectively. The result showed that very high level of investment is needed to achieve universalizing primary education. And it was observed that out of 17 states, Bihar and Uttar Pradesh were the worst and Kerala is
the only state strictly committed to UEE. To achieve UEE, the Kerala state required only 0.6 per cent of SDP. But Bihar state required 5.7 per cent of its SDP and it needs to make an annual investment of the order of 8 per cent of State Domestic Product (SDP) for achieving UEE. Turning to the all India level the result shows that currently around 1.2 per cent of GDP is spent on elementary education, but it needs to be more than doubled and around 3.1 per cent of GDP needs to be allocated to UEE in India. This study suggested that resources alone can’t transform the situation without appropriate socio-political changes and commitments from government, institutions, teachers and parents.

**Bhatty (1998)** studied educational deprivation in India by surveying in the field. The important reason behind this study was that although free and compulsory education was included in the Indian constitution, educational backwardness of India was quite glaring even after fifty years of independence. This study was mainly based on a survey of field-level investigations. It addressed the issues of economic constraints, schooling quality and parental motivation as the possible influences determining the educational decisions within a household and contributing to the overall picture of educational deprivation at the national level. It was found that an over emphasis was being placed on child labour and inadequate motivation among poor parents as the major obstacles to the Universalization of Primary Education (UPE). It further pointed out that it was the direct cost of schooling, which imposed a substantial burden on families and the low quality of schooling facilities, which reduced child's interest in education that primarily account for educational deprivation. Further, it was found that poverty was the main cause of educational deprivation. At the end, the study concluded that in reducing private costs of schooling as well as improving education quality and the state should play a crucial role.

**Tilak (1999)** studied financing of elementary education in India during 1990s. Tilak made an attempt to know the status of education expenditure and government commitments towards UEE with the efforts of Jomtien Conference of EFA on education in India. Here he observed that the trend in financing of education during the 1990s and public expenditure on education generally declined from 1.6 per cent to 1.4 per cent in 1996-97 as proportion of national income and per pupil expenditure
also declined during this time. He estimated the financial requirement to UEE for next ten years to be an additional 137 thousand crores, which is about 14 thousand crores a year and on average about 0.7 per cent of national income per annum. He concluded his paper with the remark that ‘finance is only a necessary condition, but not a sufficient condition for achieving the UEE in India.

Financing of elementary education in India in the 1990s was studied by Sipahimalani (2000) who compared public spending on elementary education over time and across states. The study examined the variations in real expenditure and real expenditure per student and the role of household spending on sending children to government, private aided and private unaided schools in the various states. Further, an attempt was made to correlate public expenditure with enrolments in elementary schools in the various states. It was observed that the total real public spending on elementary education grew by 5.3 per cent a year over the period 1991-92 to 1996-97 and then rose to 5.8 per cent per annum during 1997-98. The paper concluded that in order to enable all children up to the age of fourteen to attend elementary schools, a higher rate of growth in real expenditure than have emerged in the nineties is required. While all the states increased resources for elementary education, most of the educationally backward states need to invest more resources in the future. It suggested a joint investment from central government, individual state governments and households to meet the future needs of the educational development.

Decentralisation myths and reality in education under panchayatraj was evaluated by Acharya (2002). The main thrust of this study survey was to know, how according to respondents of different categories, the primary school system worked under the panchayati raj. A majority of the respondents opined that the standard of teaching-learning has deteriorated during the previous five years. Almost 85 per cent of guardians and 83 per cent of school inspectors, 65 per cent of teachers and 63 per cent of attendance committee members opined that the standard has really fallen, but 73 per cent of Panchayat members had a different view. Further, a majority of teachers, attendance committee members, and Panchayat members considered that the present procedures of selection and appointment of teachers was not on performance base, so they concluded that teachers should be selected strictly according to their merit and without any preference for local candidates.
De et al., (2002) analyzed the primary education in Himachal Pradesh. According to this study, at the time of independence Himachal Pradesh had the lowest literacy level but recently Himachal Pradesh had shown remarkable progress in literacy over time. It ranked second in literacy among 16 major states and the Total Literacy Campaign (TLC) in the 1990s has made a significant contribution as well. Statistics indicated that Himachal Pradesh had been attacking and closing the gap between regions and people less well served by the education system. The study found that the disadvantaged sections of the community have shown a remarkable rise in literacy rates. The DPEP conducted a baseline assessment survey of the four difficult districts in Himachal Pradesh in 1996. Achievements in these areas were fairly good. The study attributed the credit for the success of people of Himachal Pradesh to the character and nature of the hill society.

Ramachandran (2003) observed backward and forward linkages that strengthen primary education. The creation of backward and forward linkages was essential to create an environment where every child not only attend school but also benefit from it. It was found that the literacy rates improved everywhere and that improvement was particularly rapid in Rajasthan, Orissa, and Madhya Pradesh while Uttar Pradesh and Bihar lagged behind. It was concluded that while the national all-age sex-ratios have increased in most areas, the situation has worsened in Himachal Pradesh, Gujarat, Haryana, Punjab and New Delhi. It was also noted that in Himachal Pradesh, while the literacy level has gone up and almost 98 per cent of children in the school going age were enrolled and attending school, the sex ratio has declined from 976 in 1991 to 970 in 2001.

The state of primary education in West Bengal was studied by Rana et al. (2003). Their study observed that government has played a positive role in the expansion of primary education in West Bengal but certain problems still prevailed in it. Poor attendance, perceived class differences, power and gender discrimination prevented socially under-privileged groups from accessing education opportunities. It suggested that the success of the government's experiments in providing cost-effective primary education, particularly to the most under-privileged sections of society must be recognized.
Kaushik and Karol (2003) evaluated the education as the component of economic and human development in Himachal Pradesh. They depicted the remarkable progress that Himachal Pradesh has made in literacy rates from 21.36 per cent in 1961 to 77.13 per cent in 2001. Himachal Pradesh was observed to be ahead of all neighbouring states by a margin of seven to 12 percentage points. They concluded that the real development of education in Himachal Pradesh began in the second half of the twentieth century when an integrated and well thought of educational policy was articulated and implemented in the state.

The Expenditure on Education in India: A Short Note (Chowdhury and Bose, 2004) observed that the total state expenditure on education in the country fluctuated around three per cent of GDP, which is far below the six per cent of GDP benchmark set up by the Kothari Commission during 1966. It also highlighted the inadequacy of reduced resources was primarily from the unwillingness of the central government to undertake adequate expenditure on education and the government priority towards elementary education than higher education as a proportion of total budget expenditure. It stayed firmly with the Mujumdar committee’s recommendation of resources required (1998-2007) to achieve UEE, to mobilize additional required resources. This study suggested taxation to rich and privileged people as well as cess on corporate taxes, personal income tax and customs duties, to provide sufficient funds to education.

Majumdar (2005) studied variations in secondary schooling across the states of Andhra Pradesh, Kerala, Maharashtra and Tamil Nadu. The study emphasized the need to deal with the challenges of universal elementary education and the expansion of secondary schooling simultaneously, rather than sequentially. Except in a few educationally forward regions of the country, secondary schooling was found to be highly restricted, because a majority of young people from deprived communities did not have access to secondary education. It was observed that the decisions regarding virtually all school related activities were concentrated at the state level. Further there was a case for strengthening aided schools as a potentially effective means of narrowing the gaps between the privileged youth and their disadvantaged upper class.

Guaranteeing elementary education, a note on policy and provisioning in contemporary India, (Jha, 2007) assessed the existing programmes/policies and
financial commitments of the Indian states in providing UEE. The study noticed a few bottlenecks which are mainly responsible for the delay in India’s progress. These are neglect in the public provisioning of education and inadequate spending and malfunctioning of schools and other relevant institutions. Further the policy initiatives of the government in the last few years did not generate optimism results with respect to addressing the huge deficits in the education sector. There is a greater sense of urgency in contemporary official discourses to address existing problems to move forward rapidly.

**Sankar (2007)** analyzed the financing of elementary education in India through SSA programme. The planning commission took the decision to implement the new funding pattern of 50:50 shares between centre and state for SSA. The earlier funding pattern was 75:25 and there was uniformity in providing funds. From this pattern better off states got benefit and lagged states did not get much benefit. There is an increase in overall allocations for elementary education from SSA, with the planned expenditure and allocation/expenditure per child increased tremendously. The planning commission's plan to implement the new funding pattern, which is uniform in nature, affected SSA programme adversely. Economically and socially better off states continued the performance, but lagged states stayed back in the rally. The study suggested multiple options to solve the present problems.

1. To go back to 75:25 share to reduce the burden of lagged states
2. To go to 50:50 shares to better off states and 75:25 shares to lagged states.
3. Grant-in-Aid scheme to lagged states from the Centre
4. Follow the differential funding than uniform funding
5. Provide higher weightage to lagged states and lower weightage to better off states.

**2.3.4 Accountability, Transparency and Efficiency of Public Expenditure on Education**

Numerous empirical evidence of weak linkage between public spending and outcomes continues to grow and economists have to explain this phenomenon theoretically. The result has been two distinctive schools of thought to know why government spending is effectively a failure in the context of development outcomes.
The first group of theoretical models explained that government spending enriched private investment in social institutions such as schools and healthcare facilities. The second set of theories focused on actual inefficiency of government spending. The majority of studies focused on developing and transition countries with the latter theoretical framework. These studies present various reasons for the inefficiencies of government spending. This section tried to review the available literature in this area.

Woodhall and Blaug (1967) attempted to construct an index of total factor productivity for the British secondary education sector, with a discussion on the theoretical and practical problems of measuring inputs and outputs of education. The result of their study shows the decline in total factor productivity in the UK’s secondary education over the study period.

Harbison and Hanushek (1992) gave an overview 96 studies of educational production functions in developing countries, and 187 studies of education production in the U.S.A. Their study investigates the relationship between educational inputs and outputs. They specify the functional form of the production function, and use data from different schools in the region or country to estimate the coefficients for a regression of the production function. Output of the production is measured by test scores, teacher pupil ratio, teacher education, teacher experience, teacher salary, expenditure per pupil and the availability of facilities. Finally the study found that availability of facilities has a positive and significant impact on education output, and that effect of expenditure per pupil is significant; the pupil-teacher ratio and teacher salary have no discernible impact on education output.

Budgetary institutions and expenditure outcomes binding governments to fiscal performance was studied Campos and Pradhan (1996). It was found that the lack of transparency and accountability were two major factors that contributed to weak spending efficiency in Ghana, Malawi, and Uganda. The study argued that, without transparency and accountability, countries were unable to enforce existing laws regarding budget priorities and choices. In contrast, Thailand and Indonesia were found to have relatively more efficient budgetary procedures. Thailand could use information from local governments to make better spending decisions. This study explicitly discussed the role of transparency and accountability in spending efficiency.
Focusing on the inefficiency of government expenditure and investments, Pritchett (1996) discussed situations in which governments fail to act as profit-maximizers and the value of public investment is higher than the value of public capital produced. The study has given several explanations for why governments may not act in a cost efficient manner, including government corruption and patronage.

Public spending on health and education in Uganda was studied by Ablo and Reinikka (1998). The paper considered the efficiency of public spending in developing countries and argued that budget allocations to public sectors institutions such as schools and health facilities did not have the intended effects on development outcomes because the promised funds do not reach intended destinations. The study found evidence that the effectiveness of public spending suffers from a lack of accountability in the transfer of funds from governments to education and health facilities.

In their study on public spending and outcomes, does governance matter? Rajkumar and Swaroop (2002) developed a model with development outcomes as a function of a country’s gross domestic product, spending on development programs, and country-specific parameters. The model allows for some leakage of public funds, where the fraction of public program funds reaching the program is a function of the quality of governance of the country.

Besley and Burgess (2002) developed a principal-agent model, which allows political transparency and accountability to impact pro-poor government spending decisions. They used the theoretical model to show the politicians will employ more effort in poorer areas if media access is high and if there is a higher voter turnout for elections.

Afonso and Aubyn (2004) studied non-parametric approaches to education and health efficiency in OECD Countries. In this study they used two alternative non-parametric methodologies (Full Disposable Hull (FDH) and Data Envelopment Analysis (DEA)) that allow the estimation of efficiency frontiers and efficiency losses to address efficiency in education and health sectors. This study gave more importance to measure the quantity of inputs. This study believed on the approach to be advantageous since a country may well be efficient from a technical point of view.
but appear as inefficient if the inputs it used are expensive. Only three countries were found to be efficient, Japan, Korea and Sweden, and the remaining states were found inefficient. The study used multiple inputs and multiple outputs. It incorporated inputs such as hours per year in school, teachers per 100 students in education and doctors, nurses, hospital beds in health. On the other hand PISA in education and life expectancy and infant survival rate in health as outcomes in the model. The study concentrated on inputs with variable returns to scale.

Integrity, transparency and accountability in public administration regional and international trends and emerging issues were evaluated by Armstrong (2005). In this paper he discussed good governance programs supported by the United Nations (UN) that have resulted in increased accountability and transparency in local and national public administration system. It also argued that these aspects of good governance have generally increased worldwide in recent decades and stressed the important role that transparency and accountability play in reaching development objectives including the MDGs.

Keefer and Khemani (2005) studied on democracy, public expenditure, and the poor. They discussed the ways in which budget allocations can fail to benefit the poor due to political market imperfections. It focused on the lack of transparency as one of the key market imperfections that can lead to public expenditure that do not benefit poor people. They found that the education and health sectors are exclusively liable to these market failures.

Public sector efficiency in the new member states of European Union compared to that in emerging markets was studied by Afonso et al. (2006). The study aims to compute efficiency scores and rankings by using various measurement techniques. The study used Public Sector Performance (PSP) and Public Sector Efficiency (PSE) as a composite output indicator and the total government spending as a ratio of GDP as an input variable. At the first stage, it used DEA to estimate the technical and relative efficiency of member states based on both input and output oriented models. At the second stage it used Tobit regression to identify the discretionary factors which influence the model. The study found that the expenditure efficiency across new EU members states is diverse compared to the group of top performing emerging markets in Asia. The study shows that factors such as per capita income, civil service
competence and education level can prevent inefficiency in the public sector. The final econometric analysis also suggested that high education levels, a competent civil service and the security of property rights seem to provide an 'extra boost' to public expenditure efficiency.

Efficiency and effectiveness of public spending on tertiary education was studied by Aubyn et al., (2009). This study used semi-parametric and Stochastic Frontier Analysis (SFA) method to assess the efficiency in public tertiary education system across EU countries plus Japan and the US. The study collected required data from OECD about outputs and inputs during the period 1998-2005. Total expenditure on PGD institutions as percentage of GDP and total public expenditure on tertiary education were considered as input. And data on graduates in PGD institutions, published articles, and citation were considered for outputs. It found that inefficiency in tertiary education is related to institutional factors, quality of secondary education and efficient spending. Important policy implication of the study was that expenditure on education should go hand in hand with institutional reforms.

Iyer (2009) investigated the effectiveness of public expenditure on primary education outcomes in 115 districts of U.P, A.P, and Karnataka states. The study has taken three important parameters like per capita income, student-teacher ratio, and ratio of government schools to private schools for investigation. It was found that simply spending on a variety of educational programmes will not guarantee better educational outcomes. But larger private schools are consistently correlated with better school outcomes. It was suggested that district-wide vouchers system should be introduced to enhance the quality of education system and for this purpose government needs to focus on Public Private Partnership (PPP) model to contract more public primary schools to private schools. Further it was also found that children get more educational benefit through participation of parents and community in school management committee. Accordingly, it suggested information sessions and workshops should be conducted in local areas to alert parents for their children’s early education. Further, it was also envisaged future research work on relative costs and benefits of the numerous government initiatives in primary education. Finally it recommended that policymakers should concentrate on alternatives for improving the efficiency of utilizing the public educational funds.
Tyagi et al., (2009) analyzed the efficiency of schools using DEA in Uttar Pradesh state in India. The paper aimed to assesses the technical efficiency and efficiency differences among 348 elementary schools of Uttar Pradesh state in India by a linear programming based technique, DEA. This study used multiple inputs and outputs, important inputs of the study are school resources such as teaching, physical, ancillary facilities, teacher's qualities and home environment of school students such as parent's education and occupation, and for output variables such as school-wise average marks in environment studies, mathematics and languages. Principal component analysis was used for preparing these inputs and outputs. It found that the average efficiency in most extensive model is 70.58 ranging from 19.44 to 100 per cent and 67 schools were found efficient. Finally the study provided school-wise planning information to policy makers. The study investigated efficiency differences of schools of U.P. in India. It collected data of 348 schools of seven districts in Uttar Pradesh and the data are cross-sectional and aggregated to the school level. The study relied on NCERT for data.

Aiglepierre and Wagner (2010) analysed the international aid to education and its effectiveness for achieving UPE. The focused on the period 1999-2007 and explained the educational achievement not only for coverage but also in terms of equity and process. It was found that the aid to primary education does significantly improve coverage in primary education and gender equity and the returns of aid to primary education appear to be decreasing. Aid to primary education is less and less effective as the amount increases, the governance variables do not appear to influence the effectiveness of aid to primary education. This study suggested interesting areas of future work on the effect of aid to education on better substitutes for quality and on secondary and tertiary education.

Sunitha and Duraisamy (2010) studied technical and scale efficiency of higher technical education institutions in Kerala in India. They employed DEA to understand the technical terms. The important purpose of their paper is to assess the efficiency of seven engineering colleges and seven polytechnic institutions in Kerala state. This study was based on the primary data collected through institutional survey of engineering colleges and polytechnic institutions in Kerala. And it also aimed to compare the efficiency of selected colleges during the period 2006-07. This study
used input oriented approach with multiple inputs and single output. Further, study also estimated Variable Returns to Scale (VRS) and Constant Returns to Scale (CRS) in order to capture the scale efficiency. The study used inputs such as teaching staff, non-teaching staff, personnel expenditure, instructional expenditure, administration expenditure, learning expenditure, total cost of the institution and age of the institutions and student enrolment as output variable. The study showed that the mean technical efficiency of engineering institutions scored between 0.72 and 0.93 across models and the mean technical efficiency scores lie in the range of 0.82 to 0.96 for polytechnic institutions that showed better performance in Kerala.

Public spending efficiency and political and economic factors from selected East Asian countries was analyzed by Chan and Karim (2012). This study analyzed public spending efficiency and the effect of political and economic factors on public spending efficiency in East Asian countries for the period of 2000-2007. In the first stage, the non-parametric DEA approach is used to estimate public spending efficiency scores. In the second stage, the Tobit regression model was used to determine the effect of political and economic factors on public spending efficiency. The study found that China is relatively more efficient in public spending on education, health and maintaining economic performance and stability, Japan on infrastructure and Singapore on promoting public services. Further, countries in East Asia are relatively less efficient in public spending for promoting equal income distribution. The result indicates that the political stability and financial freedom have a positive effect on public spending efficiency. However, voice, accountability and civil liberties have a negative on public spending efficiency.

Prachitha and Shanmugam (2012) studied on efficiency of raising health outcomes in the Indian States. According to them health is a state subject and merit good. Therefore, the state governments in India spend increased amounts on it. This study measured the efficiency of Indian states in raising health outcomes, using the stochastic frontier methodology for the period 2000-2009. The study collected secondary sources on IMR in the Sample Registration System (SRS) bulletin published by GOI and RBI sources. The average efficiency was estimated at 72.7 per cent and it indicates that the state governments have scope for improving health performance without additional resources. It was also suggested that the states can
improve their health performance by increasing their expenditure on health, providing more medical doctors/specialists, educating people and creating health awareness. Finally this study suggested that the policy makers, researches and other stakeholders to take up appropriate strategies to improve the efficiency of health performance of various states in India and remove the regional imbalances.

An empirical study on technical efficiency in Uganda's primary education system based on panel data was carried out by Muvawala and Hisali (2012). It estimated the technical efficiency and its determinants for Uganda's primary education system using parametric models. This study was undertaken on a panel data set on performance index and educational outputs of various categories of primary schools for the period 2001 - 2008. The study found that all primary schools in Uganda's are technically inefficient, but private and urban schools are relatively more efficient than government- aided and rural schools. It is feasible to improve learning outcomes without increasing spending on primary education for private schools, where a 56 per cent improvement might be expected. But for government-aided and rural schools, efficiency gains on the basis of current funding will result in a mere one per cent improvement in learning outcomes. Improvement in learning outcomes for government-aided schools required increased resources. This study used parametric technique for estimating the result.

In the field of transparency and accountability, only a small number of studies have been conducted to bridge the gap between the theoretical discussion of how these concepts should effect development outcomes generally and educational outcomes particularly and there is empirical evidence that this link exists. The researchers used various methods to test a hypothesis that increasing the public knowledge of government processes and implementing ways in which community can hold government accountable for its actions will increase administrators’ incentives to allocate money and effort towards social development programs.

2.4 Conclusion

The above discussion reveals the importance of expenditure on education for the growth of the economy and also noted the growing perception that it has greater relevance to the developing countries. But in the current atmosphere of growing state
expenditure on education, whether education is to be treated as a public or a private good, and whether expenditure on education is to be treated as consumption or investment need to be understood correctly. If it is seen as consumption good, that is private in nature, then the market mechanism may be regarded as the most effective means of ensuring its adequate supply. In this context state expenditure on education must be reduced in order to increase investment in other areas of greater importance.

However, education offers private monetary as well as non-monetary benefits to its consumers but also has externalities associated with it, which confers benefits to society at large, even to those who have not had any education. Due to this, when education is considered as public good the government should take major responsibility in providing education opportunities for its citizens.

The empirical literature shows that there are number critical issues were analyzed. A good number of studies have looked into the relationship between education and economic development of several countries. Some other studies have analyzed the trends in expenditure on education, efficiency, accountability and transparency issues in education administration etc. Majority of these studies are at macro level focusing on the education policy.