CHAPTER – 1

INTRODUCTION
Education holds the key of economic growth, social transformation and economic progress. The development of education is achieved through the advancement and application of knowledge. Therefore, every country of the world maintains a large number of educational institutions. Education performs numerous functions in the process of economic growth. Education acts as the catalyst of socio-economic change by generating the proper attitudes and growth environment. Educational development accompanied by economic development brings desirable changes in the habits, attitudes, values and skills of the people which in term are utilized for the development of the nation as a whole. Education is of great instrumental value in the process of economic growth and development. The objective of the socio-economic development is to improve and enhance the quality of life of the people through enhancing their well-being.

The aim of education is to develop the capacities and abilities latent in human nature and to coordinate them for the enrichment and progress of the human being. Education is desired for itself as it opens up a vast world of opportunities and ideas to the person for the progress and development.

The economics of education has to trace the two way relationship between the education sector and socio-economic sector. The inter dependence of these two sectors – Education and Economic growth in individual’s life in general and nation as a whole in particular – has attracted the attention of educationists, economists and policy makers. Education is an industry and like any other productive activity, education industry also requires financial, material and human resources for its operations. It also requires the factor of production and other inputs. The
consideration of various aspects of ‘Education Industry’ makes the problem of economics of education challenging because of its controversial productive efficiency of the investment of capital.

Indeed this realization of the role of education in economic development dates back to the time of classical economists. It is well known that Adam Smith regarded education as ‘the acquired and useful abilities of all inhabitants or members of society.’¹ Emphasizing the importance of education ‘as a national investment’ Alfred Marshall expressed the view that ‘the most valuable of all capital is that invested in human being.’²

The relationship between education and economic development has received even more attention in recent years. Schultz observed that in the United States of America during the period 1900-1956, the expenditure on education has increased about three and half times relative to consumer income and relative to gross formation of physical capital. The studies conducted by Schultz are so insightful that this inaugurated a new era in economics. Just as Adam Smith is considered to be the father of economics, Theodore W Schultz is known as the creator of educational economics. The birth of economics of education is usually dated from the presidential address by Theodore W. Schultz delivered to the


Annual Meeting of American Economic Association in December 1960. The view that economics of education has been the brain-child of Schultz is supported by following points:

(a) He observed the role of information, knowledge and skills as the instrument of agriculture development.

(b) He developed the vision regarding various forms of human capital and their impact on economic growth in a logically convincing manner through the investment in man as human capital.

(c) He linked the role of human capital to development and developed the innovative approaches of input and output in human capital. He hypothesized that the income growth can be generated by the growth of investment in education.

Rao held the view that education helps to build the individual’s productive capacity and his ability to take his due place in the army of workers who have to fight the battle for economic growth. Blaug demonstrated that people with more education earn on average higher income than people with less education. On this basis, he argues that costs incurred by individuals in acquiring more education


constitute an investment in their own future earning capacity. He strongly believed that investment in education accelerates economic growth.

The concept of human capital constitutes the core of educational economics. Formation of human capital is the most important function of the education system. The economy has to furnish financial and other resources for the maintenance and growth of education. According to Parnes, Educational system has to provide new knowledge, information, skills, training and innovations to the economy for social engineering. The single most important function of modern educational system is to alter and improve the quality of work-force and furnish and equip the workers with those skills and abilities that are required for the operationalisation and technological up-gradation of production process of the economy. Besides, supplies from education are required to synchronize with the levels and patterns of demand for manpower both in time and space for which education have to grow and develop ahead of the economy.

Smith treated human being both ‘as wealth and as the means to produce wealth.’ He thought of ‘men and machines’ and treated the expenses incurred on the formation of skills as investment in man. He treated physical subsistence-nutrition, health, training and education which are ‘financed out of the personal stocks’, as yield ‘differential earnings to individual’s, and as raise national income and wealth’ to be an essential part of capital’.

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The theory assumes labor to be the primary factor of production and physical capital to be embodied labor. More sophisticated the machine, greater will be the knowledge and skills embodied in it. Thus man’s competence and capability decisively determine wealth. Human capital thus emerges as the true numeraire in Smithian analysis.8

Sir William Petty, recognized human capital as an agent of production and factor of growth. Petty attempted to measure quantitative dimensions of human capital and its effect on capital in quantitative terms. He said, “Rich land is better than worse land of the same rent, people endowed with greater skills, sound health and more knowledge are better than those having ill health, or low or no skills and no or low knowledge.”9

In Indian Constitution, a number of important provisions which had a direct or indirect bearing on education had been included. After independence, education has been shaped to a great extent by social or national goals. Certain Directive Principles of State Policy have been enshrined in the constitution. The constitution of the country has divided the responsibility between the Government of India and the States. Entries 63, 64, 65 and 66 of List I (Central List) and entry 25 of List III (the concurrent list) clearly indicate the importance of education for social upliftment of the society. Article 4510 of the Constitution reveals that universalisation of primary education in India was to be fulfilled by 1960. The article reads “The State shall endeavor to provide within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of fourteen years”.


The expression “State” occurring in Article 45 has been defined in Article 12 “the Government and Parliament of India and the Government and the Legislature of each of the States and all Local or other authorities within the territory of India or under the control of the Government of India”. India continues to have a very large number of illiterates. Government has failed to achieve its objective at even after 63 years of independence. Free education at the primary stage is imparted only by the government schools, private schools are charging heavy fee for the same. The expansion on primary education is not taking place properly due to shortage of financial resources. Efforts should be made to educate as many children as possible so as to make them literate. However, qualitative achievement in primary education in the country will still remain a dream. Universalisation of Elementary Education (UEE) has been accepted as a national goal. As a result of the efforts made by the Government of India, State Governments and Local Bodies, ninety four percent of country’s rural population have primary schools within one kilometer. The constitution bill (Eighty-third Amendment) 1997 introduced in the Rajya-Sabha on 28th July 1997 to make “Right” to free and compulsory education for children from six to fourteen years of age a Fundamental Right.

In July 1964 the Government of India appointed a National Education Commission to advise it on the national pattern of education and on the general principles and policies for the development of education at all stages and in all aspects. Prof DS Kothari, Chairman of University Grants Commission, New Delhi, was appointed the Chairman of National Education Commission 1964-66. Shri J.P. Naik, Head of the Department of Education Planning, Administration and Finance, Gokhle Institute of Polities and Economics, was its Member-Secretary. The commission\textsuperscript{11} started its work through twelve Task Forces and Seven Working Groups on October 2, 1964 and submitted its report on 29 June 1966 to Government. Separate Task Forces on School Education was constituted by the Commission. Chapter VII to X of its report comprises school education. On reformation of education the Commission commented, “In our opinion, therefore, no reform is more important or more urgent than to transform

education, to endeavor to relate it to the life, need and aspirations of the people and thereby make it a powerful instrument of social, economic and cultural transformation necessary for the realization of our national goals. This can be done if education is related to productivity, hastens the process of modernization and strive to build character by cultivating, social moral and spiritual values.

Ministry of Education, Government of India, appointed a committee in August 1972 under the Chairmanship of Shri PD Shukla to suggest the measures for the implementation of 10+2+3 Educational Structure for school and college.\textsuperscript{12} The committee was also asked to estimate the cost of implementing the 10+2+3 system of education. The committee suggested that the curriculum for classes XI and XII should be in two streams i.e. academic and vocational. The Sixth Five-Year Plan 1980-85 emphasized on universalisation of elementary education and the introduction of job oriented education. During this Plan there was a great emphasis upon the expansion of primary education and secondary education.

From Sixth Five-Year Plan education was considered a pivotal instrument in the socio-economic development of the country. The report of the Steering Group for education in the Seventh Plan suggested a new design of education which is flexible, varying, relevant and linked to social environment which is diversified in nature. The major programmes\textsuperscript{13} of Seventh Five-Year Plan for the education were:

2. Eradication of illiteracy in the age group of 15-35 years.
3. Qualitative improvements and re-orientations of education at all stages.

\textsuperscript{12} The Committee on 10+2+3 Educational Structure 1972, the Manager of Publications, New Delhi, 1973.
4. Vocationalisation of Higher Secondary Education.

5. Modernization of technical education

In July 1991, Central Advisory Board of Education (CABE) appointed a committee on National Policy of Education under the Chairmanship of Janardan Reddy, the then Chief Minister of Andhra Pradesh. The committee submitted its report in January 1992 and popularly known as Revised National Policy on Education 1992. Twenty two task forces under the renowned educationists on all the aspects of education formulated the programme of action draft. The Policy emphasized the need for a much higher level of investment in education of at least six percent of the national income. As per the commitment of the Government, about six percent of the GDP would be earmarked for education sector and fifty percent of the outlay would be spent on Primary Education.

The Census 2001 shows the highest jump of 13.71 percent in the literacy rate since 1951, with the average literacy rate going up from 52.91 percent in 1991 to 65.38 percent in 2001. Out of 200 million children in the age group of 6 to 14 years, 42 million children do not attend schools. The Central Government has passed “The Right of children to Free and Compulsory Primary Education Act, 2009” for enacting the Fundamental Right to free and compulsory education for children in the age group 6 to 14 years. The Central Plan outlay of the Tenth Five Year Plan for education was 4.92 percent of GDP.

In the context of the formulation of Eleventh Five Year Plan 2007-2012 sector wise working groups/steering committees/task force had been set up by Planning Commission to make recommendations on various policy matters.

The Eleventh Plan\textsuperscript{14} places the highest priority on education as a central instrument for achieving rapid and inclusive growth. The plan will also have to address major challenges including bridging regional, social and gender gaps at all levels of education. The targets and special focus areas are:

\textsuperscript{14} Eleventh Five Year Plan 2007-2012, Planning Commission, Volume II, Social Sector, 2007, Chapter I.
1. To achieve 80 percent literacy rate.
2. To reduce gender gap in literacy to 10 percent.
3. To reduce regional, social and gender disparities.
4. To extend coverage of National Literacy Mission (NLM) to 35 plus age group.

Education and skill development will receive high priority in the Eleventh Plan. Public Expenditure (Centre and State) on education is only around 3.6 percent of GDP. The National Common Minimum Programme (NCMP) had set a target of raising it to 6 percent. Secondary Education is a crucial stage in the educational hierarchy as it prepares the individual for higher education and also for the world of work. Classes IX and X constitute the secondary stage, whereas classes XI and XII are designated as senior secondary stage. The normal age group of the students in secondary classes is 14-16 whereas it is 16-18 for senior secondary classes. The population of the age group 14-18 was 8.55 crore in 2001 census. The estimated population of this age group as on March 2007 was 9.69 crore. The Gross Enrolment Ratio for classes IX-XII in 2004-2005 was 39.91%. The figure for classes IX and X was 51.65% and for classes XI and XII was 27.82%. The following educational statistics\textsuperscript{15} would give the present status of Secondary and Senior-Secondary education in India as on 30 September 2004:

1. No. of Secondary schools : 101777
2. No. of Senior-Secondary schools : 50272
3. No. of students at Secondary level : 2.43 crore
4. No. of students at Senior-Secondary level : 1.27 crore
5. Population of 14-16 age group( as on 30.09.2004): 4.71 crore

\textsuperscript{15} Selected Educational Statistics (2004-2005) - Provisional Data, Population Projections are based on census data compiled by Registrar General of India.
Out of 101777 secondary schools and 50272 senior secondary schools, 41.05 per cent belong to Government and local bodies, 29.35 per cent Government-Aided and 29.6 per cent are private unaided. The All India average of the number of secondary and senior secondary schools per 100 sq. km area is only four. The average number of schools per 1 lakh population is as low as only fourteen. The Gross Enrolment Ratio of 39.91% is very low as compared to most of the Asian countries which have a Gross Enrolment Ratio of more than 60%. There is a gap between boys and girls; the Gross Enrolment Ratio of boys being 44.26% is 9.2% more than of girls as 35.05%.

(1.1) Objectives of the Study:

In India according to the latest census in 2001, literacy was 65.38 percent. Not more than 10 percent of our population has education above 10th standard. Nearly two thirds of the eligible population remains out of senior-secondary education. Properly planned education can act as an effective growth tool for the national economy. Also proper planning can become a useful instrument of social mobility for underprivileged section of the society. Since resources are scarce, economic benefit and efficient utilization is must and economizing of resources, means, making the best use of available resources.

The Government of Delhi is spending about 10 per cent of its total plan allocation on Education sector and still having 81.67 percent literacy rate. At Senior-Secondary stage only 54.95 per cent students were enrolled in March 2007 and remaining was out of education-system. Even though large expansion in education is obviously desirable, resource constraints hamper this expansion. Also the problem of educational finance and administration is not restricted to the question of mobilization of adequate financial resources but it is also concerned with the efficient utilization of resources and proper allocation so as to improve the institutional efficiency. On the basis of institutional cost it is possible to determine the optimum size of an educational institution. The concept of unit cost analysis is a tool of measuring the efficiency of the institution. The question of internal efficiency measurement is to be considered with the wastage and stagnation in educational system. The proposed study titled, “Economics of Senior Secondary
**Education: Unit Cost Analysis at Micro Level in East Delhi** will have the following major objectives:

1. To estimate the unit cost of educating the child at Senior Secondary stage in East Delhi for the year 2008 and 2009.
2. To know the Institutional Cost of senior secondary education of different streams offered by different managements namely Kendriya Vidyalaya Sangathan, Private Public Schools, Private Schools aided by Government, Government Schools and Rajkiya Pratibha Vikas Vidyalyas.
3. To examine the variation in institutional cost of education in various streams namely Arts, Science, Commerce and Vocational of different types of schools at Senior Secondary level in East Delhi.
4. To estimate the level of wastage and stagnation of different types of schools, at Senior Secondary stage of education in East Delhi.
5. To compute the Private Cost of education of students opting different streams at senior secondary stage in different types of schools in East Delhi.
6. To find out the causes responsible for low educational accomplishment of the schools at Senior Secondary stage.
7. To identify the factors responsible for wastage and poor quality of educational products at Senior Secondary level in East Delhi.

**(1.2) Hypothesis to be tested:**

In modern research methodology hypothesis are guiding powers in all its rigorous and disciplined fertility. The hypothesis set guidelines for the research scholar. It enables the researcher to know what facts and data are to be collected and what are to be avoided or filtered. By formulating a wise hypothesis the investigator is able to save a lot of time which he would have otherwise spent in trials and errors. Van Dalen Diebold and Meyer William J (1966)\(^{16}\) rightly said

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“Hypothesis is indispensable research tools, for they build a bridge between the problem and the location of empirical evidence that may solve the problem. A hypothesis provides the map that guides and expedites the exploration of the phenomenon under consideration.”

Kerlinger (1964)¹⁷ said about hypothesis, that it is the most powerful tool; man has invented to achieve dependable knowledge. “Man observes a phenomenon he speculates on possible causes, naturally his culture has stock if answer to account for phenomenon, many correct many incorrect, many a mixture of facts and superstitious and mythology. It is business of investigator or researcher or scientist to doubt most explanation of the phenomenon of the field under investigation. His doubts are systematic. He insists upon subjective explanations of phenomenon to control empirical test. In order to do this he must so formulate explanations that they are amenable to control empirical test and so they are type of predication under study.” The operational hypotheses of the study which are to be tested are:

1. Educational accomplishment of schools in relation to the costs varies from institution to institution managed by different managements.

2. Cost per student, in institution managed by the government, is higher than that of those managed by the private agencies.

3. Variation in the cost is explained by the teacher-student ratio and number of students admitted in an institution.

(1.3) **Universe of the Study:**

The study estimates costs of education in East Delhi comprising East and North East educational District of National Capital Territory of Delhi. Hardly any study on cost analysis of education of different streams at senior secondary stage has been conducted at micro level. Schools from both the Districts i.e. District East

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and North-East have been selected for the study. All the schools of East Delhi do not offer all the streams of studies at Senior Secondary level. However schools having Arts, Science, Commerce and Vocational stream have been selected as viable unit of micro level cost analysis. A total, 214 Government schools, 22 Government-Aided schools, 4 RPVVs, 4 KVs and 362 Public schools are imparting education in East-Delhi. The facility of senior secondary classes and all the streams of education are not available in all these schools. Total 14 schools of East Delhi for micro level study were identified on the basis of the availability of all the streams for the present study which included 03 Government schools, 03 Public schools, 02 Pratibha Vikas Vidyalyas, 02 Government-Aided schools and 04 Kendriya Vidyalyas as the universe of the study.

(1.4) **Methodology:**

An attempt will be made in this study to examine the institutional cost and private cost at senior secondary level by types of schools being managed by different set of managements in East-Delhi. In East-Delhi, senior secondary education of different streams i.e. Arts, Commerce, Science and Vocational is provided by Government schools, Government-Aided schools, Rajkiya Pratibha Vikas Vidyalyas (RPVVs), Kendriya Vidyalyas (KVs) and privately managed Public schools.

Costs of education are borne at two domains – the Institutions and the Households. Institutional cost may be defined as the aggregate of all expenses incurred by an institution in providing the education. It includes all the expenditure incurred by the Institution such as Salary Cost and Non-Salary Cost. Salary Cost includes Teaching Cost, Non-Teaching Cost and Inspection Cost. Non-Salary Cost includes cost of supports services (academic), cost of supports services (other than academic) and cost of co-curricular activities. For estimating the institutional cost, the information/ data pertaining to total school enrolment, senior secondary enrolment, result, salary of teaching and non-teaching staff, inspection staff, number of teachers teaching different subjects, expenditure on infrastructure, expenditure on co-curricular activities etc were collected through a well-designed questionnaire. For the purpose of calculation of Teaching Cost, total salary of the subject-teachers teaching senior secondary classes; have been divided from the number of total enrolled senior secondary students learning the subjects of opted
streams from these subject teachers at the school level, under study. Since, all the students from class first to twelfth are availing the services of non-teaching and supporting employees, for estimating the Non-Teaching Cost, the total salary of non-teaching staff and supporting staff have been divided from the number of total enrolment of school. The supervision and inspection of schools is done at Zonal, District, Regional and Central (Directorate) level. The Inspection Cost has been calculated on the basis of total enrolment proportion at zonal, district, regional and central level. The cost of supports services (academic), cost of supports services (other than academic) and cost of co-curricular activities have been worked out after dividing the total expenditure from the number of total learners. After adding the Salary cost and Non-Salary cost, as projected here, the Institutional Cost has been derived.

Private Cost relates to the total expenditure incurred by the parent or student or both. It includes the expenditure incurred on School Fee, Examination Fee, School Development Fee, Boys Fund/PTA/Nidhi Fund, Fines, Laboratory Charges, School Trips/Picnic, School Clubs, School Functions, School Uniform, School -Transportation, Sports, Text/Help-Books, Stationary, Mobile/Internet, Computer, Tuition/Coaching, Pocket Money etc. For estimating the private cost, data has been collected from 6,336 students of Arts, Commerce, Science and Vocational streams, studying in Government Schools, RPVVs, Government Aided Schools, KVs and Public Schools. After having added the two components, unit institutional cost and unit private cost of education, Average Total Unit Cost of education have been estimated for all the streams taught in different types of schools in East Delhi.

(1.5) Limitations:

Any study on costs of education in India suffers from certain limitations. The present study is no exception to this. It carries with certain additional limitations as well. Estimation of annual value of fixed assets is one of the major problems. The cost of land and building once developed and used as “school” can not be estimated as it varies from place to place, area to area and time to time. Since cost of land is governed by the factors of Demand and Supply, it is not practically possible to estimate the cost of land and building. Though, private managements who impart education through public schools always take into
account the cost of land and building of the school. However, that is kept outside
the framework of this study. Even the term “education” used in this study is
extremely limited in its coverage. There can be formal and non-formal types of
education; the study is largely confined to formal education in the “schools”. Even
with respect to “schools”, the study is literally limited to schools level education
only. The term “Senior Secondary” is confined to XI and XII years of education
imparted in the schools of Delhi and not the “Higher Secondary” where the
education is imparted after 8th year of education. Unsound data supplied by private
managements i.e. “Public schools” poses serious constraints for an ambitious
researcher in the field of Economics of Education. The present researcher also
experienced the same constraints. Over reporting of the salary of teaching and non-
teaching staff by public schools is one problem. While estimating the private cost,
data on “private tuition” was collected from the students of private public schools
and government managed schools. Students from private public schools hesitated
in reporting the tuition expenditure. There are many more limitations, perhaps
some of which are quite obvious.

The measurement of educational output by Degree or Diploma or Certificate
is not completely free from limitations. Measurement of educational output by
“Degree/ Diploma/ Certificate” awarded merely because of its susceptibility to easy
quantification. The measurement of output successful on “33 percent score” and
failure on “32 percent score” may have criticism. Atkinson (1983)\(^\text{18}\) raised the
philosophical objection to the quantitative measurement of educational system. He
remarks that “Oscar Wilde’s description of a ‘cynic’ as a man who seek to measure
the output of education.” Therefore, “measurement” or “valuation” of the
efficiency of the education system in itself is a limitation.

\(1.6\) \textbf{Framework of the Study:}

It is proposed to begin the research work with an elaborate discussion on the
concept of human capital and economics of education. Reports of different

Committees, Commissions and Government resolutions have influenced the educational system and its growth in India. Education after independence has seen various changes according to the available resources and need of the society. Chapter I of the present study will have conclusive discussion on the birth of economics of education, logical linkage of education with economic development and Indian education system with the projection of enrolment at Senior Secondary level.

Before we go into our specific area of study and its corresponding estimates of cost, it is desirable to have the detailed view of the problem of costs of education and its magnitude. Based upon few earlier studies and a fresh analysis of those studies we present various estimates of costs of education in India completed by different researchers. We shall specially review the literature with reference to costs of Education. Though more emphasis will be given on estimation of costs of senior secondary education, however the estimation at primary, middle or higher education will help to understand the methodology adopted by different research scholars and their conclusions from policy implications point of view. The same review of literature we propose to carry out in Chapter II of this study. A thorough discussion on various aspects of costs of education and the importance of cost analysis which has become a tool for policy and planning in education will be discussed in Chapter III. Cost analysis in education will measure the productivity and efficiency of education and same will be discussed in this chapter.

Educational efforts in Delhi are organized, administered and supervised by four types of agencies. Their functions and responsibilities, though different and distinct, quite often overlap, for none of them is singly and wholly responsible for policy making, operation and finance. These four types of agencies, Central Government, State Government, Local Bodies and Private Institutions are responsible for providing and looking after the educational facilities in Delhi. Structure and development of education in general and senior secondary education in particular in Delhi will be discussed in Chapter IV of this study. Institutional cost of school education at different stage may vary from institution to institution. Since Government agencies and Public schools provide schooling facilities, their Institutional cost is to be studied thoroughly. We propose to carry out the study of Institutional cost of different streams of school education at senior secondary stage in East Delhi in Chapter V. The expenditure incurred by the individual student or
by parents on transport, books, stationary, extra coaching or tuition classes, funds like Boys Fund, Vidyalaya Nidhi Fund and other related items add up to the personal costs or private costs of education. The socio-economic back-ground of the students influence the expenditure habits and private cost. Though school education imparted in government institutions is almost fully subsidized, private-cost has to be incurred by the parents. As long as student is not the part of the labor-force or earning member of the society, private costs become major constituent of educating the child. We propose to study in Chapter VI the private cost of the school education at senior secondary stage in East Delhi.

On the basis of data collected from different schools on Institutional cost and data collected from parents on private cost, average total cost of the school education at senior secondary stage will be estimated in Chapter VII of the present study. Since expenditure on education is considered as national investment which is justified by higher productivity and better efficiency, this approach in education is also known as cost benefit or cost effective approach to educational planning. Wastage in education always exists because of the poor educational planning and failure of educational system. The wastage and stagnation in same class minimize the educational productivity and efficiency of educational system. The same will be thoroughly discussed in Chapter VIII of this study. Chapter IX of the study presents a summary of the work and the policy implications that can be inferred from the study. It is to be noted that reduction in the costs of education is not a proper objective in a developing country like India, where cost is already deplorably low. Hence this will not be the main objective of the study; however cost analysis from streams-study point of view will explore the possibilities of expansion of senior secondary education in India in general and in Delhi in particular.