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# UNIT 13 EDUCATION AND ECONOMIC DEVELOPMENT

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## 13.0 OBJECTIVES

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After going through this unit, you will be in a position to:

- 1 appreciate the significance and value of education in economic growth;
- 1 explain the consumption versus investment debate in education;
- 1 know about the historical debates that have preceded the identification of investment in education as an important component of economic growth;
- 1 develop an appreciation of the capital value of education and the limitations of treating education as a form of capital; and
- 1 distinguish between physical and human capital.

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## 13.1 INTRODUCTION

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Beginning with an introduction of the key concepts, the unit provides a historical perspective of the recognition accorded by early contributors to economic theory who regarded education as an important instrument of development. Subsequent developments leading to the understanding that investment in education results in 'human capital formation' and therefore its promotion is vital to realise the fruits of development in a holistic and comprehensive manner, are spelt out next. The unit winds up by introducing the different approaches/methods that have evolved in measuring the economic value of education.

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## 13.2 KEY CONCEPTS

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### Economic Growth

The production of goods and services in a nation during a given period (usually one year) is termed as its Gross Domestic Product (GDP). This product is composed of contributions from agriculture, industry, services and the management sectors. They are referred to as the primary, secondary, tertiary and quaternary sectors. Any increase in the production of commodities and services in any of these sectors from one year to the next year is known as sector-specific growth. The overall increases from all sectors to the economy is known as economic growth. Hence, economic growth is the increases in GDP from one base year to the next year.

Note:

- 1) Land, labour, Capital and Organisation along with technology are considered to

be the factors of production. A higher level of technology is mediated through a higher volume of skills in the labour force. Higher the skills in the economy, higher is the level of production. For the same time spent by labour, efficiency of production increases with increasing skills. This is how education contributes to economic growth.

- 2) If there is no increase in production from one year to the next year and alternatively if there is decrease in total production, it is termed as negative growth.

### **Development**

The word development is from the Latin root 'Voloper' which meant wrap up, envelop. The English used this word along with 'des' meaning 'undo'. The word used was 'disvelop'. The French replaced this word in 1656 with 'develop' which meant unfold or unwrap. The act of unwrapping may also be interpreted to mean expanding, diversifying, redistributing the contents.

The popularity of the term development began with decolonialisation. Going through several conceptual metamorphosis through the decades, currently development is taken to mean economic growth that is contributed by a large cross-section of the population which in turn would also mean large scale employment, increasing incomes and a resultant appreciation in the quality of life of the people. The distributional effects of growth [i.e. 'growth with and through justice' policy or the 'equality in growth' dimension] are incorporated in the current conception of development.

### **Education**

Education has a very broad connotation. It is not to be straitjacketed with schooling. Any experience of life that results in learning is education. Learning may be characterised either by modification of behaviour or a change in thinking style. Schooling is a planned and organized learning process. The skills transmitted by an agriculturist to his offspring, by an innovative farmer to his fellowmen, by a mother to her children are also a form of education that may result in directly productive and tangible experiences or lead to the development of desirable habits of life. This is termed as informal education. Knowledge and skills developed in training programmes, apprenticeship programmes, adult education centres are also not like formal schooling. Still they are educative and contribute to economic growth. They are known as non-formal education. Formal education is normally referred to the programmes of school and college education.

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## **13.3 SIGNIFICANCE OF EDUCATION TO ECONOMIC DEVELOPMENT**

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The place and significance of education in economic growth and development has been well recognised in economic thought since the turn of the 20<sup>th</sup> Century. This recognition began with the writings of Adam Smith. Before Adam Smith (since the time of Aristotle up to the period of Mercantilian economics), expenditures on health and education of workers, not to speak of the general population, was considered to be a waste of public resources. Aristotle distinguished between liberal and servile education, that is, education of free men and of slaves. He considered that slaves do not need any formal education. They pick up their skills, their tricks of the trade or services from their elders. This type of thinking was prominent even up to the Mercantilian period. It has been aptly summarized by Bernard De Mandeville: "Reading, writing and arithmetic are very necessary to those whose business requires such qualifications; but, where people's livelihood has no dependence on these Arts, they are very pernicious to the poor who are forced to get their daily bread by their daily labour" (Robbins, "Theory of Economic Development", 1968). The logic of such thinking has to be understood in its economic context. Feudal economies of the past were discrete, relatively less interdependent, dominated by

agriculture and allied activities, having low levels of technology and industrial development with limited markets. However, with the beginning of the 16<sup>th</sup> Century, the post-Renaissance and Reformation period, there was a growth of colonialisation, discovery of new continents and countries and regions, expansion of markets, growth of towns, increases in people's mobility and communications. Development of markets and the economy and society in general in Europe and England was also associated with the growth of colonialisation and colonial administration. It means that the data-base on human beings – observational and experiential data – was also expanding. Comparative perspective on this data-base was also emerging. It is from such a data-base and vantage of perceptions that Adam Smith asserted in a radical way that the expenditure on education and training of human beings is a form of fixed capital: "The acquisition of such talents ..... during his (acquirer's) education, study or apprenticeship, always costs a real expense, which is capital-fixed and realised, as it were, in his person. .... The improved dexterity of the workman may be considered in the same light as a machine or instrument of trade which facilitates and abridges labour, and which, though it costs a certain expense, repays that expense with a profit." (Adam Smith, "The Wealth of Nations", edited by Cannan E, 1904, Vol. I, pp. 264-65). Since the time of Smith, economic theory has been increasingly conscious of the value of education in economic growth and social development. It is by now strongly believed that productivity of workers in the firm and on the farm, rise in levels of income and consumption, promotion of social and economic mobility of historically deprived sections of population, regulated growth of population, alleviation of poverty and suffering of masses of population are facilitated by schooling and education of the people. In other words, education contributes to overall development of society and elevation of quality of life of individual households.

Advanced countries of the Western World, especially the European countries, have become prosperous and wealthy through a process of evolution spread over nearly three centuries. The developing countries began their march towards economic growth and prosperity by the middle of the 20<sup>th</sup> Century when they became decolonialised and independent. All these countries, referred to as 'late comers' in development literature emulated the advanced countries, the 'pioneers' in their plans for economic growth. Continuous supply of high level skills, persons with technical/vocational/management/professional education was one of the essential ingredients envisaged in this model of growth. (Lewis, W.A., 1954 and Hirschman, A .O. 1958). It became clear from the beginning of the growth process of developing countries that they could not perform to expected levels without overcoming the paucity/shortage of skills. Along with capital and technology, adequate supply of skilled labour was necessary for 'balanced growth'.

The process of decolonialisation of the developing world began after the second world war. The new and independent nations got both an opportunity and challenge to decide on their destiny. They needed to plan for their own growth and development. Planning is an exercise which implies the balancing of given resources with the needs of the people towards pre-set goals of individual and national life. The developing countries, including India, had witnessed enormous depletion of their resources during the colonial regimes. They had limited resources with people having unlimited needs and wants. They had to satisfy the continually rising hopes and aspirations of the people. Justice for all, equality and freedom from basic needs and wants of life, were the goals of national life as delineated by the Indian Constitution. Ensuring food security for masses of Indian population, provision of employment, alleviation of poverty and suffering among the people and redressal of regional disparities were some of the specific and concrete goals. Prevention of dreadful epidemic diseases like small pox and malaria, health care for the citizens, removal of illiteracy and spread of schooling facilities, were also some of the national needs. The Indian State, just as other developing countries, faced a dilemma that was stated as follows: Should we fritter away our limited resources on literacy

promotion, schooling, health care facilities and similar avenues which are a sort of 'consumption', and are not directly contributing to economic growth, food production, industrial development, trade, business and commerce or should we be prudent (wise) enough in spending on roads, communications, production and supply of fertilizers, setting up of industries that satisfy the demand for steel, cement, machinery and equipments, as well as harness the water resources of our nation for agriculture through irrigation projects, produce energy and power that is of value for industries. In sum, should we not spend our limited resources on directly productive and 'growth' oriented strategies. In all the debates, discussions and deliberations surrounding this dilemma, expenditures on health and education got classified as 'consumption' while that on infrastructure development works like roads, electricity, communications, irrigation etc. got classified as 'investment'. Education, thus, got marginalized in investment planning as it was treated as a form of consumption.

This was, in general, the thinking/logic, of establishment/government economists. The proposition that national expenditures on health and education is a form of consumption was challenged by a group of economists, many of whom were on the faculty of the Chicago University. Theodore Schultz was prominent among these economists, the others being Gary S. Becker, Edward F. Denison and Dale Jorgensen. They were joined by other economists such as Mary Jean Bowman, Charles Anderson, Harbison, Myers and David McClelland. These economists propounded the contra-view which held that expenditure on education and health is a form of investment. It is to be noted that the dividing line between consumption and investment rests upon the time gap between expenditure and the utility arising out of it. That expenditure whose utility is immediate and terminal such as the one on food is called consumption. That expenditure which creates wealth and a greater capacity for expenditures and which is not intended for realisation of immediate satisfactions such as that on fertilisers is called as investment. Applying this definition of investment for expenditures on education and health, the Chicago economists argued that expenditures on education enhance the capabilities of individuals and develop their skills which serve as inputs for increasing economic productivity in agriculture or industry or the services. In essence, they are also a form of capital, a major factor of production, which was called as Human Capital. Education and health are no longer drains on the public purse but are avenues of investment. Hence they should be given adequate weightage in public expenditures.

The position taken by the Chicago school of economists was formally and forcefully stated by Theodore W. Schultz in 1960. Schultz was then the President of the American Economic Association. He titled his presidential address for that year as "Investment in Human Capital" ["American Economic Review", Vol. 60, No.1, 1961]. Schultz identified five sources and forms of human capital formation. They are: health and fitness, formal schooling, non-formal education, apprenticeship and other in-service education and training programmes, and finally migration.

The assertion that expenditures on education and health is a form of investment on human capital formation, and the so generated human capital raises productivity of workers and thus increases the total production and wealth of an economy could not attract easy acceptability among mainstream/establishment economists and planners. They argued that the contribution of agriculture, animal husbandry, manufacturing, processing, transport, commerce and several other market activities are quantifiable and tangible in money measures. This was held to be not true in regard to education. Hard evidences were, therefore, needed about the capital-value of education to convince the policy-makers, planners and administrators to juxtapose education along with other established sectors to compete for demands for investments. Policy makers favour expenditures on education and health as welfare measures and not as sources of economic growth. Economists who are convinced of the economic value of education were left with a search for evidences to establish that expenditures on health and education lead to capital formation. The

search had to conform to standards of scientific opinion. This meant that it was to be backed by systematic data-base, logical analysis and arguments and universal validity. Given the variety in human contexts of living, diversity in backgrounds of researchers, the search for evidence began to proceed in four different directions (see Section 13.4).

In comparison to India, the South East Asian economies such as South Korea (now Korea), Indonesia, Malaysia, Singapore and Thailand performed very well both in quantitative and qualitative terms during the period 1950 to 1990. When the patterns of growth along with their path of development was examined and compared with economies like those of India, it was discovered that the East Asian economies had not only initiated a number of reforms for economic growth as early as from the 1960s and 1970s but also had made a frontal/direct attack on poverty alleviation. They had heavily invested on universalisation of elementary education, post-secondary technical education and primary health care. The significance of elementary education in the economic growth of these countries came out clearly in the studies done by World Bank (1993) and Stiglitz, J. E. and Shahid Yusuf (ed.) (2001). Now, economists all over the world are convergent in their thinking that education at all levels contributes in a variety of ways to the diverse sectors of an economy and to overall economic development. Education has occupied a pride of place in developmental planning and finance. It is a component, in a symbolic way, in the construction of development indexes such as the Human Development Index (HDI) of the UNDP. It is reflected as one of the Millenium Development Goals of the World Bank. A global movement for Education for All is already in force since 1990. This movement began at Jomtien, Thailand in 1990 with the adoption of a resolution by representatives of 153 nations. The space for education in the calculus of economic growth is by now clear, stabilized and visible.

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### **13.4 MEASURING THE ECONOMIC VALUE OF EDUCATION: ALTERNATIVE APPROACHES**

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A review of research works regarding the economic value of education shows that it developed in four different directions. They are:

- a) Simple correlations approach,
- b) Growth accounting or residual analysis approach,
- c) Cost-benefit analysis, and
- d) Manpower planning

In simple correlations approach indicators of economic growth are correlated with indicators of education. Correlation values are used to draw inferences regarding the economic value of education. At Macro level, national level data were used prominently by Harbison & Myers, Mary Jean Bowman and Charles Anderson, and David McClelland. Scores of micro-level correlation studies have also been conducted in different parts of the world. Very high, positive and significant correlations between education and development were discovered in all these studies.

However, the mainstream economists were not satisfied with all these studies. They dismissed these evidences on the ground that "Correlation is not Causation". Hence, research on the relationship between education and development went in the direction of growth accounting approach, using Regression Analysis techniques. Using United States national income data for the period 1929-1958, Denison and Schultz did independent analysis and demonstrated that nearly 25 per cent of the growth during that period was accounted by education. This was a startling revelation highly useful for creating a space for public investments in education. Later, Jorgensen continued research in the same direction and for the period 1959-1988 further demonstrated the contribution of non-economic factors to development.

Using data on individual earning profiles, several researchers demonstrated the contribution of education to earning differentials among individuals over a life-time. These researchers used the Cost-Benefit approach. George S. Psacharopoulos, formerly Chief, Education Division, World Bank, has been regularly providing updates on the researches in this direction at the global level.

East European nations and the USSR adopted Manpower models for educational planning in their centralized planning models. This was basically to strike ‘fitness’ between supply of educational skills and demand for manpower. In this way, expenditures on education could be made more and more efficient, relevant and meaningful.

**Check Your Progress 1**

1) “It took nearly two hundred years since Adam Smith for education to get a clear, stabilized and visible space in developmental thinking”. Briefly justify this statement.

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2) Critically examine the debate concerning education as consumption Vs education as investment.

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3) Briefly describe the alternative methods for measuring the economic value of education.

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**13.5 DISTINCTION BETWEEN HUMAN CAPITAL, MANPOWER AND HUMAN RESOURCES**

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As has already been noted earlier, the term human capital became popular after it was used by Theodore Schultz in the title itself of his Presidential Address to the American Economic Association. Schultz identified five sources/five forms of human capital which have already been noted.

Classical economic theory recognised only two factors of production that best explained agricultural economies – Land and Labour. With the growth of industrialisation in Europe and England, a third factor came to be recognised and that was capital in the form of machinery and equipments. Land, machinery and equipments were together treated as physical capital. With the popularity of ‘money’ as a medium of exchange in trade and services, a development over the barter system, David Ricardo distinguished between fixed capital like land or machinery from money which he referred to as ‘circulating capital’.

**Human Capital, Manpower and Human Resources**

Health and education are normally considered as human capital. Health includes

both physical health and fitness. Education includes formal, non-formal, in-service and travel-related experiences of life. Formal education has several objectives such as knowledge, skills, attitude and appreciation, application as well as values of life. In contrast, ‘manpower’ normally refers only to the ‘skill’ component of education. Manpower is the equivalent of machine-power. Machine-power increases the speed and efficiency of human endeavours. If a man can walk 5 kms in an hour, a two-wheeler or a four-wheeler can carry him within 10 to 12 minutes. Higher the machine power, or horse-power (hp) of the machine, higher will be its pulling capacity. Manpower is the equivalent of horsepower. Manpower refers to the skill component of human beings. It increases the efficiency of their functioning. An economy with superior manpower stock as well as flow can grow faster when other resources are guaranteed. The term ‘human resources’ is a comprehensive term which not only includes human capital – health and education component of a person – but also comprises a person’s mind-set, world-view, value-frame, intelligence, emotional stability and other personality attributes. There is a controversy regarding the use of the phrase human resource development (HRD) or human capital. Is human being a resource or a capital to be employed for the realisation of national goals such as economic growth and prosperity. If s/he is a resource, then what/who are the ends of growth? Is human being means or an end? It is to lower the dignity and worth of human personality in thinking of her/him as a resource/capital for investments. Democracy is essentially a highly individualized political mind-set and human being should always be treated as an end in himself/herself. However, s/he has the potential for knowing, thinking, acquiring skills, apply things learnt for self-development, etc. It is this particular characteristic of human beings that distinguishes between human capital and physical capital. There are a number of differences between the physical capital and human capital. Listed in Table 13.1 is a comparative frame between the two.

**Table 13.1: Comparison Between Physical Capital and Human Capital**

<b>Physical Capital</b>	<b>Human Capital</b>
<i>Examples:</i> Land, Machinery, Equipments, Natural Resources	<i>Examples:</i> Knowledge, skills, attitudes, health and fitness
1. Visible, tangible or quantifiable	Invisible, not precisely quantifiable
2. Value gets reduced with use – depreciation	Value gets increased with use
3. This is always a means to an end	Can be both a means and an end
4. Can be priced and exchanged for money	Priceless even though it is priced
5. Consumers and producers are different	Consumers and producers are the same
6. Stock gets exhausted with use	Stock never gets exhausted
7. Efficiency of use depends only on technical quality of the product	Efficiency does not depend just on technical quality; sincerity and dedication of the user are also important

**Check Your Progress 2**

1) Identify the components of human capital as delineated by Theodore Schultz.

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2) Distinguish between physical capital and human capital; and human capital and manpower.

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### 13.6 LET US SUM UP

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Economic theory did not place much value on education and training for economic growth and development for a long time since Aristotle. This was alright for an agricultural economy where land as physical and fixed capital along with labour were considered as the two factors of production. Demand for goods and services was also quite low as there was sparse and low volume of population. With the turn of the 15<sup>th</sup> century and the coming to an end of the era of dark ages, there was Renaissance associated with growth of science and technology, industrialisation and mass production, communications and transport, and the emergence of a market economy. Specialised skills and training became necessary. Adam Smith recognised this reality in 1776 and wrote eloquently about the values of education and training and health and fitness, the human capital, for economic growth and development. This line of thinking grew over time and influenced developmental policy and planning since the 1950s, thanks to the laborious lobbying by economists like Theodore Schultz and Gary Becker. Values of health and education, as human resources, are now well recognised for economic growth and development.

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### 13.7 KEY WORDS

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- Economic Growth** : Increase in the Gross National Product or Gross Domestic Product of a nation from one base year to the next reference year.
- Economic Development** : It refers to the distributional effects of growth and increases in the quality of life of the people resulting from growth.
- Education** : All experiences of life that influence the thinking styles or behaviours or attitudes to life of people is education. Such influence is the result of experiences known as learning. Learning may be in formal organisations such as schools or apprenticeship training programmes and also in informal organisations such as the home.
- Consumption and Investment** : Expenditures made on any good or service that is directly consumed, like food items, air travel, taxi service, clothes etc. are consumption. Expenditures which creates wealth and a greater capacity for expenditures and which is not intended for realisation of immediate satisfaction is called as investment.
- Human Capital** : Health and education of a person is his/her capital that will be of use for production of wealth or earnings.



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## 13.8 SOME USEFUL BOOKS

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Mark Blaug, 1960, "Economics of Education", 2 vols.

Paul Sheehan, 1965, "Economics of Education".

John Vaizey, 1960, "Economics of Education".

Theodore Schultz, 1961, "Investment in Human Capital" American Economic Review, Vol.60, and No.1.

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## 13.9 ANSWERS / HINTS TO CHECK YOUR PROGRESS EXERCISES

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### Check Your Progress 1

- 1) See section 13.3.
- 2) See sections 13.3.
- 3) See section 13.4.

### Check Your Progress 2

- 1) Components of human capital as delineated by Theodore Schultz are: health and fitness, formal schooling, non-formal education, apprenticeship and other in-service education and training programmes and finally migration.
- 2) See section 13.5