

## THE ECONOMICS OF EDUCATION: CONCEPTUAL FRAMEWORKS

Kebede Tesfaye\*

### **Abstract**

*Among the factors of production, labour and entrepreneurial ability lend themselves to improvement by education in the widest sense including training. Education makes people more receptive to change and innovation. It also ensures that individuals who are responsible for making major technical, economic and political decisions possess the knowledge, which enables them to avoid potentially dangerous mistakes. Such results follow from the employment of increasingly better-educated and trained personnel in productive undertakings.*

*The demand for educational services tends to be large with an increase of the population, the increase of economic development itself, and the influence which the supply of educational services eventually exert on the demand for them. On the other hand, three features, namely, time precedence, unity, and complementarity are of particular importance in determining the supply of educational services. In every country, which consciously promotes its own development, expenditure on education and training tends to increase. It is very likely that for some time educational expenditures will tend to increase faster than the gross national income. This can be ascribed both to the growth of demand for skilled labour and to the growth of incomes, which leads to higher investment in education.*

*In most countries, the number of teachers tends to increase. At the same time, and quite apart from the continual increase of costs on the construction of buildings, expenditure on non-teaching staff, maintenance of premises, health and welfare services for a growing number of students, represent a high and rising percentage of total expenditure for education and training in many countries.*

*The result is that, especially in countries where the supply of educational services falls short of demand, the rate of increase in expenditure for education and training definitely exceeds the rate of increase in aggregate and per capita real income. This discrepancy in the two rates of increase means that a country's intention on economic development has to sacrifice other items of public expenditure.*

---

\* Ministry of Finance and Economic Development.

*It is possible to predict future demand for every type of school. Forecasts should be based on reliable assumptions as regards both increase in the student population and better conditions for it. They should make provision for improvements in the professional prospects of lower and intermediate academic staff whose performance in teaching and research largely determines the quality of higher education.*

*To adapt the supply of educational services to demand requires precise information and a thorough knowledge of the main problems existing in all the various types of schools. So long as the supply lags behind current requirements, the problem of choice between various kinds of public investment does not even arise. Even though the results of bringing educational services up to requirements can be ascertained only in the long-run, their instrumental nature and economic consequences give them a priority status among all other public expenditures.*

*Finally, it is worth noting that the most basic policy issues in educational planning relate to the amount of resources devoted to education, the question of balance between the different levels of education, the content of education, the need to bring education to all, and the phenomenon of the educated unemployed.*

## 1. INTRODUCTION

Recent research confirms that the bulk of economic development in many countries is attributable to the improvement of the human factor. The influence of education on the development of a country resides in the speed with which the student is able to absorb new ideas and to adapt himself to changing and often unforeseen conditions (TGE, 1994). Education and training constitute a process of continuous enrichment by means of which each individual in a community is placed in a position in which he can develop his own skills.

Educational services in most countries are largely provided by the state. If the private sector alone were responsible for this service, society would run the risk of receiving a kind of education not in line with national interests. In view of the fact that education increasingly appears as an indispensable factor in the achievement of any community's objectives, it is coming to occupy a decisive place in a country's general policy, and, therefore, clearly falls within the competence of government.

The widest possible distribution of education and training throughout the population is all the more necessary in a country where labour force is abundant and perhaps even in excess of other factors of production. In this context, it is argued that education enhances one of the most valuable natural endowments, and permits the human factor to combine in a more meaningful way with the other factors (Simmons, 1979). Therefore, every effort to promote development in a country must start from improving the human factor.



Realizing the positive role that education plays in the development of a society and reduction of poverty, the major thrust of the paper is to shed light on the economics of education which constitutes the analysis of such basic features as the impact of investment on human capital (section two), trends relating to the demand for and supply of educational services (section three), resource allocation pattern to education by a government (section four), the instruments needed to bridge the gap between the demand for and supply of educational services (section five), and finally some policy issues in educational planning.

## **2. BENEFITS OF INVESTMENT IN HUMAN CAPITAL**

Labour and entrepreneurial ability lend themselves to improvement by education in the widest sense; including training. According to PHRD (1996), education makes people more receptive to innovations; permits increasingly advantageous combinations of factors of production; makes it possible for any new technological discovery to be brought into operation with little or no delay; promotes, both in the domestic economy and on an international scale, a far-reaching mobility of labour and entrepreneurial ability; and ensures that those individuals who are responsible for making major technical, economic and political decisions possess the required knowledge which enables them to avoid potentially dangerous mistakes.

All these results follow from the employment of increasingly better educated and trained personnel in productive undertakings. Even though the results become apparent only in the long run, they reduce risks and costs. Put differently, they lead to economies, some internal and others external; but all eventually to the advantage of production. It must be emphasized that, more particularly in the early stages of a country's economic development, education is instrumental in increasing output and in creating a basis for continuing progress (UNDP, 1994).

Both theoretical research and its practical application are manifestations of human skills which can themselves be directly improved by education. But even if one accepts the proposition that factors of production are in most cases complementary in the sense that production cannot begin if one of them is missing, the human factor still retains its priority as a determinant of the behavior of a country's entire economic activity.

## **3. DEMAND FOR AND SUPPLY OF EDUCATIONAL SERVICES**

### **3.1 The Demand for Education**

Whatever the goals of a society are, they can be achieved only by the application of human skill and effort. It is argued that one of the primary stages in the human

resource planning process is to estimate what will be required in terms of skills and number of people to achieve the goals (Margaret Foot and Caroline Hook, 1999).

The demand for educational services tends to manifest an upward trend with an increase of the population, as far as every human person has a right to be given a chance to develop his mind and skills, and society has the responsibility to make the best use of available human resources.

It also tends to increase with economic development which is essentially an increase in the real (total and per capita) income of a country (PHRD, 1996). The elasticity of the demand for educational services grows as the social and technical environment becomes more complex, and the time available for free activities also grows. The result is an increase in the schooling rate.

A third factor which augments demand is the influence which the supply of education exerts on the demand for them. For instance, the development of the arts often causes an expansion of related activities which in turn tends to generate more demand for educational services.

The causes for low schooling tend to vary according to the type of school (MoE, 1998). For instance, the causes which concern primary schools are different from those which concern universities. The family's poverty or the difficulty of getting to school may prevent children from attending primary school. At the secondary or technical schools inappropriate curricula which are incompatible with the real needs of the country may be responsible for a low schooling rate.

It is also argued that reorganization of secondary schools would help to reduce the differences between the numbers of those who enroll and the numbers who graduate in each faculty: in other words, to reduce the waste of money and effort involved in the failure of students to graduate (MoE, 1998). Only part of these failures are due to inadequate university teaching. To a much more larger extent they are the outcome, firstly, of the structural weakness of secondary schools in guiding young people into the most suitable careers, and secondly, of the absence of control over the admission of young people to universities. Such a control is not meant to exclude a priori, but primarily to guide young people in the choice of a profession.

It must be noted that clear thinking and a comprehensive understanding of the various basic factors in the demand for educational services, in every type of school, are needed in order to solve the very complex problems of education.

### **3.2 The Supply of Education**

The development of human resources has been recognized as a challenge, one amongst a number of objectives of long-term economic growth by most developing



countries. It is argued that, since the early 1970s, it has moved to the center stage of development priorities and far greater attention is now paid to human resource capability (Farhad Analoui, 1999).

Education is a general public service, which through its implied consequences, affects not only those who directly benefit by it, but also society as a whole. It is, therefore, proper all citizens should contribute towards the provision of this public service, and, in fact almost everywhere the state wholly or largely assumes this responsibility.

According to PHRD (1996), there are three important determinants of the supply of educational services. These are: time precedence, in the sense that the supply must be available many years before it is needed; unity, in the sense that all types of schools must expand at the same time; and complementarity, in the sense that due proportions must be observed in the supply of the component parts of the services: teachers, accommodation, equipment and administration.

#### ***Time Precedence of Supply***

This pertains to providing in advance accommodation for the various types of schools, and training teachers in sufficient number and quality to meet the requirements. Unfortunately, as far as teachers are concerned, a serious shortage of candidates becomes apparent in many countries just when the demand for educational services increases. It is patently obscured to seek to set up new schools, as often happens, without allocating sufficient funds for the training and subsequent recruitment of various categories of teachers.

The recruitment of teachers is affected by demographic discrepancies, competition from business by way of making advantageous offers, and alienation of young people from the teaching profession in the sense that for many young people entry into the teaching profession means giving up the most significant attractive things that the modern world can offer.

According to MOE (1998), several remedies can be suggested to alleviate the problem of shortage of teachers. One is to create a special grade of teachers for vocational training schools, which, if widely distributed in every country, will enhance both the preparation and the mobility of the labour force. Another remedy is to give teachers a statute of their own in no way assimilated to other civil service careers and offering salaries which cannot only compete with business but, above all, start at an attractive level.

The working conditions of teachers might also be improved by offering housing at modest rents, or by relieving teachers of their often heavy administrative duties, or by creating half-day-teaching jobs, which would appeal to women teachers with family

responsibilities, or finally by reducing the weekly work-load of substitute or non-permanent teachers so as to give them more chance to prepare for examinations and, above all, raising their pay. There is also the possibility of making wider use of so-called contract teachers - retired teachers, or engineers for teaching in secondary schools.

It appears that, just as the education and ability of the managerial class affect the output of the worker, the quality of the teachers affects the students' absorption of learning.

Time precedence in the supply of educational services implies also the preparation, on the basis of demand projections, of adequate accommodation, equipment and non-teaching staff, all of which go to make up educational service.

### ***Unity of Supply***

The second factor affecting the supply of educational services is its unity. When it opens up the doors of elementary education to every one and makes every effort to increase the schooling rate, the government has a duty also to expand secondary school and higher education. It is argued that only in this way can every citizen be guaranteed his/her right to enjoy, within the limits of his/her capacity, the various grades of education, and only in this way it is possible to avoid the risk of wasting human resources (Farhad Analoui, 1999).

In other words, the supply of educational services is unitary; it does not lend itself to differential development of separate levels. Too rapid an expansion at one level tends to provoke, on the one hand, a deterioration in the quality of services offered at that level: less qualified teachers may have to be used, classrooms will be cramped and equipment scarce, and less gifted students may be admitted to the courses; but it provokes on the other hand, also serious damage at other levels of instruction. Suppose that the universities alone are developed, without a proper counterpart at primary and secondary school levels; the flow to the universities of inadequately prepared students would soon depress the existing level of academic education.

### ***Complementarity of the Components of Supply***

The third element that has implications for the supply of educational services is the complementarity of such components as premises, teaching staff, equipment, and non-teaching staff. All these components have to be present in fixed proportions or at least in proportions which can vary only within narrow limits.

Expenditure on the construction of school buildings must perforce be related to the increase in the number of pupils even though in many countries attendance is not compulsory at certain levels of instruction. Usually the rate of construction of school



buildings falls far short of the rate of increase in the number of pupils, and this gives rise to such difficulties as crowded classrooms and usually high student/teacher ratio

At the same time, modern education requires not only books, shelving, machinery and the like, but also assistants of various categories, non-teaching staff such as research workers, technicians and secretarial staff, all of whom are needed in proportion to the number of students. Often this fairly rigid complementarity is not taken into consideration, with the result that even arrangements made in good faith to remedy some particular shortcomings end up by aggravating the situation.

The supply of educational services is such that even if only one of the above-mentioned elements varies, the others must vary in due proportion. Otherwise, the supply will remain inadequate.

Let us now consider the supply situation of the educational sector in the context of the Ethiopian setting. As regards to construction of schools, Table 1 reveals that primary schools have increased by 2469 during 1991 - 97. The increase for secondary schools was 98. The average yearly construction rate has been 416 for primary and 16 for secondary schools.

**Table 1: Construction of Schools by Level of Education (1991 - 97)**

Level of Education	91	92	93	94	95	96	97
Primary (1-8)	8256	8434	8988	9463	9847	10394	10752
Secondary (9-12)	284	279	303	329	346	369	382
<b>Total</b>	<b>8540</b>	<b>8713</b>	<b>9291</b>	<b>9792</b>	<b>10193</b>	<b>10769</b>	<b>11134</b>

Source: MOE, 1992-99 Education Statistics Annual Abstracts, Addis Ababa.

As a result of this development in the construction sphere and by enhancing the capacity of the already existing schools, primary school students have increased from 2.4 million to 5.1 million and secondary school students from 416,082 to 467,669 (MoE, 1992 - 1999 Education Statistics).

When the above number of students is compared with the number of children who have reached school age, the participation rate in primary education has registered an annual average growth rate of 20 percent while that of secondary education has increased from 6.6 percent to 8.9 percent (see Table 2 below).

**Table 2: Participation Rate (1994 - 97)**

Level of Education	94	95	96	97
Primary (1-8)	26.2	30.1	34.7	41.8
Secondary (9-12)	6.6	8.1	8.4	8.9

Source: MoE, (1991) Basic Education Statistics Special Report, Addis Ababa.

#### 4. TRENDS OF GOVERNMENT EXPENDITURE ON EDUCATION

In every country which consciously promotes its own development, expenditure on education and training tends to increase. This can be ascribed to the growth of demand for skilled labour on one hand, and to the growth of income on the other, both of which lead to higher investment in education. It is true that the ratio of the population of school age to total population tends to vary according to birth and death rates. However, in developing countries the large number of children who reach school age, and in the industrialized countries the increase in schooling rate for the secondary and higher levels, cause a considerable expansion of the demand for educational services and a corresponding expansion of expenditure.

The number of teachers tends to increase in all countries because of the following considerations. First, the number of hours they work tends to diminish. Second, the student/teacher ratio tends to fall, especially at higher levels of education. Third, the salaries of teaching staff at secondary and higher levels tend to increase, if only in order to attract the best elements to this key profession.

At the same time, and quite apart from the continual increase of costs for the construction of buildings, expenditure on non-teaching staff, maintenance of premises, health and welfare services for a growing number of students, represent a high and rising percentage of total expenditure for education and training in many countries.

If we take the Ethiopian situation as an example, both recurrent and capital expenditures have manifested an upward trend. A look at Table 3 shows that during the period 1991-97 total education expenditure has increased from 528.5 to 1563.5 million Birr.

**Table 3: Expenditure on Education (1991 - 97) Million Birr**

Type of Expenditure	91	92	93	94	95	96	97
Recurrent	490.3	604.0	741.0	863.5	941.0	1052.7	1126.8
Capital	38.2	88.4	256.0	269.2	441.9	421.9	436.7
<b>Total</b>	<b>528.5</b>	<b>692.4</b>	<b>997.0</b>	<b>1132.7</b>	<b>1382.9</b>	<b>1447.6</b>	<b>1563.5</b>

Source: MoE, (1991), Basic Education Statistics, Special Report, Addis Ababa.

The table that follows also reveals that the share of education expenditure to total government expenditure has increased from 12.6 to 13.8 percent.



**Table 4: Share of Education Expenditure in Total Government Expenditure (percent)\***

Type of Expenditure	91	92	93	94	95	96	97
Recurrent	15.07	17.59	16.84	16.56	16.86	17.94	15.88
Capital	4.01	4.95	9.50	8.53	12.40	9.81	10.24
<b>Total</b>	<b>12.58</b>	<b>13.27</b>	<b>14.05</b>	<b>13.53</b>	<b>15.12</b>	<b>14.45</b>	<b>13.76</b>

\* Computed from Table 3.

The result is that, especially in countries where the supply of educational services falls short of demand, the rate of increase in expenditure on education and training definitely exceeds the rate of increase in aggregate and per capita real income. This discrepancy in the two rates of increase means that a country's intent on economic development has to sacrifice other items of public expenditure.

## 5. ADAPTATION OF SUPPLY TO FUTURE DEMAND

The need for HRD's contribution to development has not only become accepted but has also been widely promoted by the national and international funding and aid agencies. It is noted that today, after experiencing a string of failed development programmes and projects within LDC's, it is recognized that the sustainability of such planned interventions can only be assured by emphasizing on the development of human resources through the provision of educational and training services which embody a proper balance of requirements and the capacity to provide such services (Lynda, Veronica, Philip, and Catherine, 1999).

Future demand for every type of school can be predicted, especially in so far as it is often a case of creating demand precisely by making certain types of schools available. For example, lower birth rates may be expected to reduce the number of pupils in the first-grade elementary schools. But this decrease may be offset by other factors, such as an extension of the compulsory school age, internal migration or a lowering of student/teacher ratio, in an attempt to avoid overcrowding of classrooms. At the same time, it is meaningful to expect a greater development for certain forms of special instruction for children who are intellectually and psychologically not fit for normal education.

In these circumstances there is a need to build a sufficient number of classrooms for nursery and primary schools and to train and recruit a sufficient number of teachers, taking account of the more favorable student/teacher ratio and of replacements for teachers who drop out for reasons of age, sickness or death. There is also a need for adequate increase in non-teaching staff, as well as in all those other elements which must be present in more or less fixed proportions.

Similarly, in forecasting the population of secondary schools, it is desirable not to overlook the effects of certain reforms, such as the raising of the compulsory school age, which will affect the schooling rates and the number of pupils, or the institution of a so-called observation period in the first years of secondary school after which the children are directed towards those types of study (classical, modern or technical) for which they show most interest. Such reforms influence both the curricula and the distribution of pupils between short education (general and vocational training schools) and long education (classical and modern secondary schools and technical institutes).

Vocational training schools, in particular, can arrange their curricula so as to enable skilled labour to adapt itself to continual technological change. So far, the problem of retraining has mostly been tackled only by private and usually large firms, and naturally such activities tend to expand when market is favourable and profit grows. But nowadays; it is argued, it is up to the government in every country to complement these private initiatives so as to provide a more skilled, retrainable and elastic supply of labour to meet the requirements of technical progress (Tekeste, 1996). In many countries, reports submitted to governments testify to the beneficial consequences of improved labour skills not only for the individuals concerned, but for society as a whole.

The establishment and wide distribution of vocational training schools are of importance not only in periods of unemployment, but even more so near the limit of full employment, because they permit the fullest possible utilization of the labour force. No government can afford not to remove obstacles to the full utilization of available manpower. Just as the government's supply of educational services constitutes an incentive for capital investment, so other types of incentives are needed for the development of the entire working potential of a country.

Finally, forecasts for higher education also have to be based on numerical factors, i.e. increase in the student population and in structural elements; namely, modifications in the distribution of students among the various faculties.

Forecasts should be based on reliable assumptions as regards both increases in the student population and better conditions for it. They should make provisions for improvements in the professional prospects of lower and intermediate academic staff, whose performance in teaching and research largely determines the quality of higher education.

## **6. SOME POLICY ISSUES**

According to Bridger and Winpenny (1983), the most basic policy question is the amount of resources that a country devotes to education, whether through private or public means. Most people regard education as a stepping-stone to higher incomes.



In countries with large differentials in personal incomes the economic return to education can be large enough to persuade people to take a chance by investing in their schooling or by foregoing earnings in a job.

There is then a question of balance between the different levels of education. On the academic plane, the three stages are primary, secondary and tertiary. In developing countries the majority of children never get beyond primary level, and a large proportion drop out before they can complete the primary stage. It is common to find, in both developed and developing countries, especially in the latter, a disproportionate concentration of resources on tertiary education, namely universities, colleges and polytechnics. This results from a perfectly reasonable wish to substitute local people for expatriates in running the nation and the economy. But it also arises out of an exaggerated fondness for paper qualifications as the *sin qua non* of advancement in all walks of life.

The type of education supplied, and the uses to which it is put, are influenced by attitudes, often unconscious, towards what education is really used for. Attitudes to education have relevance to the content of education, e.g. the choice of subjects for the curricula, and the balance between academic, technical and adult education.

The desire to bring education to all is a worthy aim, though it can mean that in poor societies the spread of primary schools can become a numbers game which in the absence of sufficient complementary resources (teachers, materials, recurrent funds) can result in a deteriorating quality of education.

The phenomenon of the educated unemployed should be acknowledged. According to Colclough (1978), this is present to some extent in all countries, but appears to a large extent in developing nations where, in the midst of poverty, skill shortages and illiteracy, large numbers of graduates are turned out for whom there is no obvious suitable work. Educated unemployment entails waste of scarce national resources.

## References

- Christopher Colclough. (1978). *Policies for Educational Reform*, Chapter in Cassen and Wolfson (eds.), *Planning for Growing Populations*, OECD Development Center, Paris.
- Farhad Analoui (ed.). (1999). *Effective Human Resource Development: A challenge for Developing Countries*, Ashgate Publishing Ltd, England.
- G.A. Bridger and J.T. Winpenny. (1983). *A practical Guide to the Choice and Appraisal of Public Sector Investments*, London: Her Majesty's Stationary Office.
- John Simmons. (1979). 'Education for Development Reconsidered', *World Development*, November/December, Pergamon Press.
- Lynda Gratton. (1999). Veronica Hope Hailey, Philip Stiles, and Catherine Truss *Strategic Human Resource Management*, Oxford University Press, New York.
- Margaret Foot and Caroline Hook. (1999). *Introducing Human Resource Management*, 2<sup>nd</sup> Edition, Longman.
- Ministry of Education (MoE). (1991). *Basic Education Statistics: Special Report*, Planning and External Relation Services, Addis Ababa.
- \_\_\_\_\_. (1992-99). *Education Statistics*, Annual Abstracts, Addis Ababa.
- \_\_\_\_\_. (1998). Federal Democratic Republic of Ethiopia, Education Sector Development Programme Action Plan, Addis Ababa.
- Policy for Human Resources Development (PHRD). (1996). *Demand and Supply of Education Manpower*, Alternative Scenarios, Addis Ababa.
- \_\_\_\_\_. (1996). *Private and Social Return to Schooling*, Addis Ababa.
- \_\_\_\_\_. (1996) *Household Demand for Schooling*, Addis Ababa.
- Tekeste Negash. (1996). *Rethinking Education in Ethiopia*, Nordiska Afrika Institute, Upsala, Sweden.
- Transitional Government of Ethiopia (TGE). (1994). *Education Sector Strategy*, Addis Ababa.
- United Nations Development Programme (UNDP). (1994). *Human Development Report*, New York, Oxford, Oxford University Press.