



**The Status of Information Technology Education in Selected Private Colleges in  
Addis Ababa**

**by  
Zelalem Wudineh**

**A paper presented at the Proceedings of the Second National Conference on  
Private Higher Education in Ethiopia**

**Organized and sponsored by St. Mary's College**

**July 26, 2004,  
Sheraton Addis,  
Addis Ababa**

## ***The Status of Information Technology Education in Selected Private Colleges in Addis Ababa***

Zelalem Wudineh

Ethiopian Science and Technology Commission P.o.box 2490 Addis Ababa.

### **Abstract**

The rapidly growing information and communication technology (ICT) is knocking at the front door of every country in the world. Globalization of ICT has made the world smaller and opaque through digital and virtual reality of cyber space. It is this technology that is setting the pace of business growth in this millennium. Entrepreneurs can break encrustation in the economy through innovation from information and communication technology and through new form of competition. Developing an IT culture is a task involving a transformation of the people and the economy from traditional agrarian society to “Knowledge intensive one”. Governmental bodies in collaboration with the private sector should take the lead in setting, as a national goal, the shift to information society. Both sectors should research and demonstrate projects in IT to cultivate and create understanding and appreciation of IT among people, and enable the great majority of people to have basic level of access to services.

Appropriate information technology (meaning technology which is grounded firmly in curriculum goals, incorporated in sound instructional processes, and deeply integrated with subject matter content) is proving to be a useful tool in facilitating learning and overall socio-economic development as opposed to passively receiving it and help develop advanced thinking and reasoning skills. Conversely, when this grounding is absent, student performances are unlikely to meet the minimum standards in business fields of studies.

The study attempted to examine the current status of IT education in four selected private colleges within Addis Ababa with special emphasis on the existing problems that hinder the learning-teaching process. The target populations of the study are students, heads and instructors of the four selected private Colleges. Questionnaires and interviews were used to collect the required data.

Shortage of personal computers, limited lab access hours and lack of adequate reference materials, lack of previous exposures to computers and stealing of computer accessories are some of the drawbacks that existed in the Colleges.

### **1. Introduction**

#### **1.1 Background**

“Knowledge is becoming the key factor of production”.  
Shyp, D. World Bank Policy Research Bulletin (1992).

##### **1.1.1 Basic Concepts about Information Technology**

Information technology, today, has become a sine quanon in all spheres of life. Making it imperative for every educated citizen to undergo an appropriate training in the field. Today, when the world finds itself at the beginning of the 21<sup>st</sup> century, most research studies indicate

that the new millennium heralds a great victory of the information technology worldwide. Yet, there are parts of this same world that lay far behind, in this respect. A number of developing countries are still unable to rejoice the benefits of these modern developments. This is mainly attributed to lack of material and skilled manpower resources among other causes.

Our civilization is in the midst of a transition from an industrial economy to a post industrial information economy. The transition, or paradigm shift is having a profound influence on the way we live and work, and it is likely to challenge many of our beliefs, assumptions and traditions. Computers and information technology are crucial to the change (Beekman 1994).

Without information technological skills, airlines simply wouldn't fly. Designers use CAD (Computer Aided Design) software to design aircraft. Engineers conduct extensive computer simulations to test them. Pilots use computer-controlled instruments to navigate their planes, monitor aircraft systems, and control autopilots. Air traffic controllers on the ground use computerized air traffic control system to keep track of incoming and outgoing flights. And, of course, computerized reservation systems make it possible for all those planes to carry passengers.

To sum up, it's becoming harder all the time to find jobs that haven't been changed in some way by information technology utilization.

### ***1.1.2 Historical Background of Education In Ethiopia***

#### ***Traditional Church Education***

We cannot date the beginning of church education exactly. It might have originated in the Axumite kingdom when Christianity was introduced at the court of king Ezana in the fourth century. Christianity, Islam, Judaism and paganism have co-existed in Ethiopia for centuries and all have founded schools for their adherents' children. Any account of Ethiopian education must recognize the contributions made by these different religious, linguistic and cultural communities (Teshome 1979).

Nonetheless, it is true that in the course of their long history of Christianity, Ethiopians evolved their own peculiar system of education. Like church education in other parts of Christendom it was designed primarily for the training of the priesthood but served also to diffuse and preserve all aspects of Christian culture (Pankhurst 1967).

### ***Foundation of Modern Education***

Gradually, post elementary schools were expanding faster than elementary education, which, in turn, gave rise to a need for further education at the College or University level. This had not been immediately feasible for Ethiopia, but when independence was regained in 1941, the old blueprints for higher education were reactivated and plan for a University College was approved by the board of education and the emperor (Trudea 1964).

On 20 March 1950, the emperor invited Dr Lucien Matte, a distinguished Canadian Jesuit educator, who had been serving as a head of Tafari Mekonnen School to take the responsibility for the first College in Ethiopia. After Dr. Matte had travelled to Europe to purchase supplies and equipment and to recruit faculty members, class began on 11 December 1950. Dr. Truedo pointed out:

It was a humble beginning. There was a staff of nine teachers, all men, who had completed high school. The students, all boarders, and some of the staff members were living together on campus, in the building that used to be the commercial school and was still partly occupied by students of this school. Dormitories, dinning halls, library, classrooms and laboratories were accommodated in this building. It was simple and poor, but sufficient too.

The University College as it came to be called included a two-year program leading to an Ethiopian higher certificate. After the formal inauguration of the College, much heated discussion ensued as to whether the College should be affiliated with a British University. The final decision was to keep the College independent and to work for the recognition of its diplomas and degrees by foreign institutions rather than submit the students to a foreign land. This was the cornerstone of higher education in modern Ethiopia.

### ***Private Colleges in Ethiopia***

The establishment of private Colleges in Ethiopia is a recent phenomena dated back to 1998. The opening of Unity College heralded it (Unity College Brochure 1998).

#### ***1.2 Statement of the Problem***

In a pre-industrial society, the development of a country was solely judged by matter. Land at that time was the basic source of wealth .Unfortunately, however, when time goes by, matter becomes a trifle thing to be dealt with—especially, in regard to measuring a country’s socio-economic status.

It’s a truth, universally acknowledged fact that everything is in flux. By the same token, the value of matter as sole criteria in evaluating a country’s development becomes lower and lower.

Gradually, the devaluation of matter paved the way to the new form of evaluation criteria called knowledge. The new industrial revolution is a revolution of mind over matter.

It is crystal clear that our times are labelled as the computer age, the information age and the age of technology. There is no doubt that the last twenty to thirty years have brought about a dramatic change in the very infrastructure of developed societies. Technological innovation has permeated so many areas of our lives - in the home, in medical care, in travel, in communication, in government, in finance, in recreational activities and of course in education. Thus, if not all, the majority should acquaint themselves to the current technological advancements so that he/she can accomplish various tasks successfully.

Broadly speaking, neither information technology which is a direct effect of knowledge, nor knowledge itself is independent of education. In one way or another, they are directly associated with education. Thus, education is a framework or rather a pillar to the development of global socio-economic achievements in general and to any nation in particular.

With the collapse of agriculture, and then of industry, as the primary provider of people's livelihood, today's increasingly service-oriented, information-based societies are familiar to the fact that an educated elite is vital for the well-being of a nation.

Illiteracy toward IT and the lack of know-how by the majority, means a heavy socio-economic blow especially in the current information age, where most or almost all tasks depend on access to information since it is the basic commodity to stick to. By analogy, education is therefore, the act of "putting a spark" in young minds.

Countries throughout the world, especially those of developed ones, now-a-days, give due emphasis to education and research, in updating current educational systems and other education related things so as to cope with and to benefit the merits driven from IT. It's a long tradition and still keeps on. Because of this and other related reasons, they climb the ladder of success and prosperity prior to the developing ones.

Speaking of developing countries, especially in Africa, little emphasis has been given to education in general and IT education in particular. When we come to Ethiopia, the population by and large is illiterate and is not aware of the value of Information Technology (IT). In a population of around 65 million, only a few thousand people know about the internet and about other related IT aspects. However, the establishment of private higher learning institutions in the recent past, especially, their efforts towards offering IT courses will contribute not only to creating a skilled

and innovative manpower, but also help citizens to come up with new ideas so as to facilitate various governmental and private businesses. However, the status of such Colleges and their efforts in creating skilled IT professionals which are capable of contributing to the overall national development endeavours has not been well studied. Due to this fact, the researcher is initiated to study the current status of private higher learning institutions in Ethiopia and their overall performances in relation to IT education.

### ***1.3 Objectives of the Study***

The overall objective of the study is to assess the current status of information technology education in four selected private colleges within Addis Ababa. The specific objectives of the study are to identify:

1. whether the colleges have adequate and appropriate technological facilities and information sources including hardware and software to support the education;
2. the current problem in offering IT education (if any) and to recommend possible solutions for the problems.

## ***2. Literature Review***

### ***2.1 Information Technology and the Emerging Global Economy***

The significance of information and communication technologies is a recurrent theme in the global economy. First, these technologies have an enabling role for the globalization trends; they constitute the means for the compression and transgression of time and space barriers. Second, information technologies are major determinants of competitiveness in global industries. This latter aspect is related to the increasing importance attributed to using information and knowledge as a factor of production and competitiveness in knowledge-based industries such as airlines, financial services and the like. IT applications nowadays have spread throughout common operational standards.

It is, therefore, worth mentioning that one of the most profound consequences of the ongoing information revolution is its influence on how economic value is created and extracted. The new information technology redefines the relationship between buyer, seller and middleman, allowing new ways of accessing and tapping information and price arrangements (Kibruyisfa and Berehanu 1999). However, these effects and further advancements and applications of ICT, can't be fully realized and utilized without the development of appropriate knowledgeable and skilled human resources.

## **2.2 Developing Countries and the Emerging Global Economy**

When we come to developing countries with regard to the emerging global economy, Augerou in his article entitled “How can IT enable economic growth in developing countries” argued that while managers and policy makers in developing countries “are mobilizing resources for the acquisition of technology - the formidable task in its own right - they have to address themselves to the organizational and economic changes that will accompany the technology innovation. The questions, therefore, that need to be addressed are what kind of economic structuring and what ways of organizing work in business firms and public services should be pursued. He summarized that policy makers in developing countries need to combine the adoption of universal standards and regulations with a process of organizational innovation appropriate to the local socio-economic context.

### **2.2.1 Africa’s Problem in Exploiting Information Technology (IT)**

It is only fair to appreciate the historical role Africa played in global information and communication. This is mirrored in the past spectrum of information technologies and other aspects of communication growth. The cave paintings, writings and the Egyptian hieroglyphics bear witness to the African past experience and contribution in the area of information and communication. The Gutenberg printing invention in Germany revolutionized works in terms of publishing and printing, but only after the early century African center stage that offered viable communication in the history of mankind (Shibanda 2000).

The communication revolution in world’s history was initiated by the early African Kingdom of Ashanti and earlier on by the ancient Egyptians. Both communities were able to relay on the first coded signal over considerable distances using “talking” drums and a sophisticated telegraphic language before Morse’s invention in the 19<sup>th</sup> century (Shibanda 2000).

Unfortunately, the historical role set by Africa in the information and communication field has been lost and Africa is seen now as a net consumer and therefore importer of information technologies. Timberlake (1998) sees Africa as a continent on the brink and explains her plight as unique in that whereas the rest of the world is moving forward with accepted indicators of progress, Africa is moving backwards. He laments that features of modern society to which many Africans have been exposed are withering with lack of spare parts, power supply, and smooth communication infrastructure and many institutions deteriorating both in physical capacity and their technical and financial ability to perform efficiently. He argues for the change of policies, otherwise development in Africa will continue to be frustrated leading to political, social and economic nightmares by the turn of the century. Sy, Habib (1994) observes that Africa is still in

the darkest ages of communication. Local business opportunities are curtailed by serious lack of knowledge about local and international markets for instance, the changing patterns of demand, or new products, technologies and methods of production. Shibanda (2000) summarized the African information technology situation as:

- ❖ Lack of sound legislation and policy guidelines;
- ❖ Financial inadequacy for investment in IT;
- ❖ Official insecurity and bureaucracy against IT;
- ❖ Need for education;
- ❖ Research and IT development structure;
- ❖ Poverty and illiteracy prevalent in African Society;
- ❖ Curtailed freedom of information due to political interference;
- ❖ Need for regional integration and cooperation;
- ❖ Need for IT cultural ethics; and
- ❖ Reduced access to knowledge and education.

### ***2.3 Survival Strategies to Alleviate the Problem***

The vision is to make Africa part of the worldwide information society. Africa, therefore, needs to come up with meaningful programmes that will surely support and activate the use of information and communication technology. Indeed, such initiatives should harmonize other international programmes ensuring Africa a partnership role in the information revolution. Shibanda (2000) concluded that the initiative need be reflected on:

- Sectoral-national-regional information infrastructure;
- Promoting the use of online communication. This can be achieved by ensuring a functional system as outlined above;
- Developing national information strategy, ideally, should consider the implication of information technology and finally make a choice to participate as partners in the worldwide information super highways;
- Incorporating a research and development system for assessment of viable trends and lines of action to ensure that Africa exploits the opportunities availed by cyberspace technologies; and
- Formulating possible programmes of action through national/regional information technology, fund policy and resource committees, information task force, network programmes, information technology promotion groups and government information technology committee.



To sum up, Africa is economically stagnant and technologically marginalized. It is time to embrace information technology as a priority area and extend the democratization process into the information and communication fields. Of course, Africa needs to have a vision for information technology and evolve information society in partnership with the rest of the world.

#### **2.4 A General Overview of Information Technology (IT) Curriculum in Colleges and Universities**

Few occupations have grown rapidly as the information profession. The US bureau of census has identified the position of information professionals as the fastest growing career between the years 1992-2005 (Cougar, 1999). This phenomenal growth rate has given rise to a number of studies of curricula and programs at College and University level and assess whether educational institutions are keeping pace with the changes in business and technology.

Studies of the IT profession recognize that several changes in the technology, business and information systems (IS) function areas are in process, which are driving revisions in the skills requirements of IT professionals. First computer technology has advanced and continues to do so at an astounding rate. As the price/performance ratio continues to decrease for processing communication and storage of information, there have been corresponding advances made in the ability to manipulate information in various areas effectively. The implications for IT professionals are that they must be able to remain abreast of these changes, to understand their potentials, and to be prepared to integrate them in to the operations of the organization. In addition, the increasing sophistication of end-users and the ease of use of technology have pushed many organizations toward distributed computing. Users are becoming increasingly more responsible for systems conception, development, implementation and management.

The changing nature of the information profession requires a new paradigm for IT education so that new information graduates have the required attributes to succeed in the rapidly changing world of the 21<sup>st</sup> century.

Gupta and Watcher (1998) outline the minimal skills that will characterize the new breed of IT professionals in the 21<sup>st</sup> century. These skills are:-

- ❖ Interpersonal and management knowledge skills which include the ability to:
  - plan and execute and work cooperatively in a project team environment; and
  - maintain productive user/client relationship.
- ❖ Business functional knowledge which includes the ability to:

- interpret business problems and develop appropriate technical solutions; and
- understand and learn about the business environment and business functions.
- ❖ Technology management knowledge which includes the ability to:
  - focus on technology as a means not an end; and
  - understand new technologies and trends.
- ❖ Technical specialties knowledge which include the ability to:
  - telecommunications networking;
  - system integration;
  - data management; and
  - fourth generation language

### ***2.5 The Role of Private Sectors in Development and Application of Information Technology Education in Ethiopia***

There is currently no private telecom company operating or investing in Ethiopia. The Ethiopian Telecommunication Corporation (ETC) is operating as a monopoly preventing any other company from moving into the sector. No role or responsibility is given to the private sector in the development of the IT industry. Moreover, the population by and large is not aware of the value of information technologies. Indeed, in a population of around 65 million, only a few thousand people know about the internet, what the worldwide web-WWW is, how it can be accessed, and what kind of information can be accessed by its use (Kebour Ghena 1999).

However, it is obviously not possible to expect much from the private sector in an environment where the laws are restrictive and the infrastructure is not set up for venture deals. Ethiopia gives and continues to give greater attention to other traditional non-technological sectors, and because only few people in the country see much value in the new technologies, their political leverage in pushing for the development of IT has been practically nil (Kebour Ghena 1999).

Accordingly, effective mechanisms should be designed to bring the private sector to:

- ✓ take risk that involve financial investment to start up companies;
- ✓ communicate its needs to government; and
- ✓ push for the acceptance of local and/or foreign financing agencies to fund IT projects;

It is important that Ethiopia formulates a coherent and all-encompassing policy for the diffusion and adoption of information and communication technology which facilitates growth and future policy, as well as the appropriate market structure, and to ensure that investment takes place properly (Kebour Ghena 1999).

### **3. Research Methodology**

#### **3.1 Target Population**

The target population of this study were senior students, instructors and heads of the colleges. Senior instructors and senior students were selected because they have a better exposure to the college so that they can provide accurate data which is to the benefit of the research. Again to make the research impartial, relevant data from the Head of Colleges were collected.

#### **3.2 Sampling Technique and Method of Data Collection**

It was quite difficult to entertain all the instructors and students selected due to the fact that the number of both instructors and students is large. In order to get appropriate and relevant data for the study, selecting experienced instructors and Heads in each college is undeniable. To this end, one instructor and one college head are selected from each college are judgement sampling technique is employed.

Students from four private colleges were considered for the study. These were Unity University College, Microlink, Queens and Zegha Business Colleges. From each college, the samples were selected by employing simple random sampling technique. A Questionnaire was distributed to a total of 72 students using random sampling techniques. To avoid repetition, the researcher adopted a control mechanism by asking them whether they not clear the questionnaire or not.

The method employed for the purpose of data collection was centred on the use of a set of questionnaire and interview which are prepared in advance. In addition to the aforementioned methods, observation was made and secondary sources were consulted.

### **4. Findings of the Study**

Based on the objectives of the study specified earlier, the available literatures were reviewed and relevant information was gathered, analyzed and presented in the following section. Previously, many of the respondents (62.5%) had no previous exposure to computers.

Students were also asked to respond, in general, what they feel about the present status of IT education in their respective colleges, here in Addis Ababa. One of the major limitations which almost all of them complained is that there is no permissive atmosphere with regard to computer utilization in the lab. Especially, lack of effective coordination, insignificant free access hours and negligence of instructors in controlling and guiding students are some of the major factors which aggravate the existing problem.

Problems encountered in the process of IT education at the colleges were also explored. Lack of adequate lecture-theatres is the one which hinders rather than facilitate the learning-teaching process. Failures to harmonize theories with down-to-earth practical applications are another constraint which aggravated the problem. About 38 students (52.8%) asserted that their attitude towards the current IT education in their college is good.

The majority of respondents suggested that lack of adequate and latest reference materials outweigh all problems by far. Furthermore, space problems were manifested in the library. Therefore, respondents suggested that the College administration should consider such drawbacks and must inject some panaceas to cure them.

Most of the students (56.9%) are found to take (learn) IT to get a Job. This shows that the majority of students are job seekers, and for this reason they join the department to have high employment opportunity. The next large number of students (34.8%) indicated that their primary reason is to cope with the current information age.

The majority of the respondents, 52 (72.2%), are not aware of the content of the whole courses in the curriculum. Only a small amount of them, 20 (27.8%), know the whole courses content in the curriculum through their personal effort. By the same token, some of them feel that the relevance of the curriculum is good. Shortage of adequate personal computers in Lab hours is a major problem which the students faced. Students were also asked to respond to what they feel or suggest about the present status of IT education in private colleges here in Addis Ababa. Their responses have been summarized as follows:

- ✓ There is no permissive atmosphere with regard to lab sessions. Especially, lack of effective coordination, insignificant free access hours and negligence of instructors in controlling and helping students are some, among others.
- ✓ They also complained that theft of computer accessories like mouse occurred repeatedly.

Even though governmental policies for the development of IT education is promising, some drawbacks such as, failures (delays) to give construction sites so as to build new campuses are discouraging. Because of this, they (the Colleges) ask exorbitant prices (high semester fees) to cover house rents.

Even if most instructors are members of professional associations like Ethiopian Information Technology Professionals Association (EITPA) and Ethiopian Computer Standard Association

(ECSA), due to time constraint (class loads) they fail to actively participate in workshops and seminars.

### **5. Recommendations**

Ethiopia is one of those societies that should do a lot to attain a better socio-economic status. The strategy to overcome this setback always lies in giving due attention to tertiary level education. Nevertheless, there is a great discrepancy between the need to provide as much skilled manpower as possible, on one hand; and the technical and material resources on the other to meet these demands. Despite this factor, there is considerable growth of information technology education nowadays. Moreover, governments must envisage a sound policy and should collaborate with various institutions to implement a better IT education in Ethiopia at the grass-root level.

When compared to developed countries, our country seems to be on the threshold of IT education. Despite this fact, more investment should be channelled towards education so that citizens are given a better chance to actively participate in the development of ICT in the country.

To foster a sound educational environment, the Colleges should acquire additional PCs, skilled humanpower, libraries and reference materials and the like. Besides, students need a practical understanding of the technology, not only of theory. Because, it is crystal clear that, traditional educational structures are not promising for the well being of any nation. Instead, new information technology (IT) curriculum which deals with professionalism, system development, interpersonal relationships and creativity driven out of critical thinking should be adopted. Therefore, to this end, instructors should devotedly help and guide students, particularly in lab sessions so that the students can easily comprehend and harmonize what they have learnt with their previous theoretical knowledge. These in turn enable students to use the technology in a pragmatic manner. Since, semester fees are too costly, the colleges should reduce the cost to a reasonable fee, in a bid to attract more people to the Colleges which indirectly contribute for creating a skilled IT professional. But all of them complained about the expensiveness of house rents, which in turn forced them to make semester fees so high. Here, the government is also expected to support actively, for example, by letting the private investors to build additional Colleges easily.

It is an acknowledged fact that the world is in flux. Especially, in IT area, every minute, new cutting-edge technology is invented in some corner of the world. To this end, as much as they can, IT professionals must be able to remain abreast of these changes, to understand their potentials, and to be prepared to integrate them into the operations of the Colleges. In addition, instructors, as well as the Colleges should heavily interact with Universities and professional associations.

Similarly, research works are expected to be done by creating coordination with staffs, management of the Colleges and with governmental bodies.

To facilitate the teaching learning process of the Colleges on top of the existing methodology, additional schemes must be adopted. For instance, it will be preferable and feasible if students have restricted access to servers so as to enhance the interaction between instructors and students. Since, distance should not be an obstruction to instruction; students can retrieve notes and submit assignments by directly accessing a shared folder on the server.

Besides classroom lectures, it is better for students to participate or to be exposed to educational visits to other organizations and the like so that they can learn from real-world scenarios.

Today, in the 21<sup>st</sup> century the minimal skills that will characterize the new breed of IT professionals are interpersonal and management knowledge skills, business functional knowledge, technology management knowledge and technical specialties knowledge. Therefore, to exploit the benefits driven from the current age, the above mentioned skills should be incorporated on top of the current curricula of those colleges which offer IT education in Ethiopia.

The Government should heavily participate in and encourage the designing of indigenous IT applications which are closely linked with the education and training strategies needed to allow countries to compete in the globalized world. Only then can the developmental role of IT be effectively targeted and geared toward overall development.

To sum up, seeking developmental impact through information technology adoption is a long-term enterprise. It requires building human resource capacities, not only to use but to manage the technologies within the framework of national development strategies. It also requires immense and carefully targeted financial investments. This calls both private and governmental bodies for the need to determine where investment in information should be made, how and to what end. To a large extent, options, boil down to the choices that those promoting the technologies, need to make between their interests in the short term and the long-term impact, as well as the decisions that national policy makers need to make in terms of their social and human developmental priorities. On top of this, government should cut taxes on imported computers, their accessories and all IT related equipment.

Finally, the study was conducted with many limitations, and has very limited scope. So, it is recommended that there should be other (further) studies which incorporate governmental plans and policies to assess the overall status, and relevance and make further improvement.

**References**

- Beekman, George (1995) Computer Currents: Navigating Tomorrow's Technology. California: Cummings Publication Co, 1994.
- Cougar, J.D. "Guidelines for Undergraduates IT Curriculum." MIS Quarterly 19 (3), 313-340.
- Gupta, J.N. and Watcher, P. (1994) An assessment of the Information System Need in Taiwan. International Journal of Information Management. 14 (5), 369-384.
- Kebour Ghena (1999) Information Technology in Ethiopia. Journal of EITPA. Addis Ababa.
- Kibruyisfa Achamyeleh and Berehanu Beyene (1999) Electronic Communication and Globalization of IT: A Case Study of Tourism in Ethiopia." Journal of EITP. Addis Ababa.
- Pankhurst, Richard (1967) Church and States in Ethiopia.
- Shibanda, K. (2000) Africa in the New Millennium. Accra: CG Publishers.
- Sy, Habib Jacques (1994) Independent Broadcasting in Ghana. Accra: Accra University Press.
- Teshome Gebremichael (1979) Educational Development in Ethiopia. Addis Ababa: Addis Ababa University Press.
- Timberlake, Liods (1998) Africa in crisis. 2<sup>nd</sup> ed. London: Earth Scan Publications.
- Trudea, K. (1964) Modern Education in Ethiopia.