INFORMATION COMMUNICATION TECHNOLOGY FOR EDUCATIONAL QUALITY: Challenges, Prospects in Ethiopian Context

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ABSTRACT

The major purpose of this project was to assess and review the principal role of ICT in supplementing the General Quality Improvement program (GEQIP) in Western Harerghe, Ethiopia. The project also further analyzed the contribution of Information Communication Technology (ICT) to the indicators of GEQIP like quality, equity, access and internal efficiency. Challenges and prospects in ICT adoption to educational system was also area of focus in the project. Enabling Policy conditions availability in the GEQIP document to implement ICT for educational quality improvement was also assessed. To investigate the above issue, relevant data were collected from secondary data sources like previous studies, journals, government reports websites, books and other related were used. From the history and philosophical ground of education and its aids in the country, if it is applied properly, ICTs have a positive impact on attaining GEQIP target in the Western Hararghe, Ethiopia.

The status of GEQIP implementations supported by ICT in the area in relation to regional wise was pointed out in some parameters. The SWOT analysis of ICT application was briefed in relation to the area. Especially, the key challenges in ICT adoption to supplement GEQIP target was listed like infrastructure, capacity building, language and contents, cost effectiveness and sustainability. Finally, the project concluded that ICTs have a great role and relevance to GEQIP target. However, the ICT materials like plasma-TV, internet laboratory, computers and specialized libraries for ICT lessons are not available or insignificant to students' number and need.

The institutional readiness in capacity building and skilled manpower is also not promising currently in relation to high skill gap in the project site. It recommends that filling the skill gap both in technical and political commitment, Stakeholders' involvement and capacitating ICT with fund. It also recommends that the policy makers should revise the ICT lesson in the educational system.

Keywords: **Information Communication Technology, Quality Education, General Education, Quality Improvement Program**

INTRODUCTION

In Ethiopia more than one hundred years have passed since modern education was introduced. However, the curriculum usefulness to the objective situation in the country is contentious (Amare, 1998). Ethiopia is facing significant educational challenges from primary through tertiary level. Despite efforts to provide free universal access to primary education (EFA 2000), national figures demonstrate that only 60% of children are enrolled, with an average of 72 primary school pupils for every teacher. Improving educational quality, whilst ensuring equity, therefore constitutes a major challenge and is dependent upon the manner in which teaching is undertaken, in regard to both pedagogical approach and curriculum structure. Wide spread textbooks and inadequate access to extracurricular learning materials also constitute significant challenges (EFA, 2000).

To tackle the above problems, the government has taken different programs and strategies and reforms. Among those programs, GEQIP is one, which is part of Ethiopian educational reform. The development objective of GEQIP is to improve the quality of general education (Grade 1-12) which specifically focuses on improving teaching and learning conditions in primary and secondary education as well as management planning and budget capacity of the ministry of education and regional bureaus of education. The components of this package are (MOE, 2007).

Curriculum, Textbooks and Assessments (CTA), Teacher Development Programme (TDP), School Improvement Programmme (SIP), Management and Administration Programme(MAP), Civic and Ethical Education, the ICT application in education, of course, ICT and GEQIP is the special focus of this project. Even though there are different challenges Ethiopia has made the development of information and communications technology (ICT) one of its strategic priorities. The ICT policy is a demonstration of its commitment to the development of ICT both as an industry and as an enabler of socio-economic transformation.

West Harerghe is one of the administrative zones in Oromia regional state. In this zone, there are 14 rural woredas, 2 town administration and 470 kebeles. As to educational institutions there are 26 private KGs, 653 primary schools, 21 high schools and 6 preparatory schools in a given zone. In the different levels of bureaucracy, GEQIP is functional, including the application of ICT to educational delivery system. Among different ICTs Satellite TV and Broadcasting Radio Programs are those commonly used in west Harerghe (West Hararge Education Office, 2011).

Concerns over educational relevance and quality coexist with the imperative of expanding educational opportunities to those made most vulnerable by globalization developing countries in general. Information and communication technologies (ICTs) which include radio and television, as well as newer digital technologies such as computers and the Internet have been touted as potentially powerful enabling tools for educational change and reform. When used appropriately, different ICTs are said to help expand access to education, strengthen the relevance of education to the increasingly digital workplace, and raise educational quality (Victoria, 2002).

However, the experience of introducing different ICTs in the classroom and other educational settings in the past seven years in west Hararghe suggests that the full realization of the potential educational benefits of ICTs is not automatic. The effective integration of ICTs into the educational system is a complex, multifaceted process that involves curriculum and pedagogy, institutional readiness and teacher competencies (West Hararge education Office, 2011).

As the integration of ICT in to education is at infant stage in the west Harerghe obviously different challenges are facing educational quality.

Practitioners select their own project setting and thematic concepts aid to deal with because of different reasons some of which are: proximity of the project setting to the practitioners and acquaintance of the practitioner to the project target group participants or other peoples in the project setting in order to access information easily. Holiday (2002:37) suggested five criteria for selecting project /research setting and titles in case studies. These are the setting must have a sense of bound (time, place, culture); it should provide a variety of relevant, interconnected data; there should be sufficient richness (instances, facets, viewpoints etc); it should be sufficiently small and be access. The practitioners academic ground also have influence in selecting the research title. Therefore, the practitioner had selected the project setting and title due to proximity to the information access point (WHOE), having the under graduate ground in MIS and working in ICT department in Dire Dawa Bureau of education. Actually, the practitioner have intrinsic motivation to apply and relate my under graduate and graduate academic grounds in meaningful way.

The analysis on the educational system and ICT-based interventions must take into account current institutional practices and arrangements. Specifically, drivers and barriers to ICT use need to be identified, including those related to curriculum and pedagogy, infrastructure, capacity-building, language and content, and financing. Among different problems facing the contribution of ICT to education, there are some common for West Harerghe Education Bureau like poor system capacity. According to WHOE (2011) the different attitudes among the stakeholder about the implementation of ICT (plasma-TV and Radio) to education system. For instance, some teachers believe that the ICT can replace them and make teachers idle. i*.e.* it reduces their importance to the class. The other thought as the plasma and radio instruction is a ready- made that can satisfy the educational quality demand. Due to the above attitudinal puzzle some officials and educational experts loss commitment to implement this component of package. Therefore, the teachers are not committed to fill the gap of lesson losses due to some technical problems like generator or electricity.

The way by which instruction is delivered by itself has its own impact on the educational quality. For example, the instruction is not designed in such a way that can satisfy all levels of students' capacity to understand the lesson due to fast pace of instruction and plasma teacher pronunciation. In other hand, the one way delivery system of plasma reduces the activity of student centeredness of the lesson.

There is also a problem of infrastructures and planning. There are some schools those have excess plasma-TV and the others have shortage which creates uneven delivery of education in the same zone even within the same school. The discontinuity of network is also problem (West Hararge Education Office, 2011). The capacity building problem is the other barrier.

Lack of experts and teachers those can operate properly and maintain whenever the system encountered the difficulty. There are only 17 ICT experts in west Harerghe zone office and Woreda offices. Little is being done in the aspects of ICT application to education by assimilating (adopting) it to the curriculum and training the teachers in further to maximize the ICT benefit (Oromia Education Bureau, 2007). This led us to further assess the curriculum, textbook and assessment component of GEQIP. The trained staffs turn-over also another barrier to monitor and evaluate the system. The incompatibility of traditional library to support ICT-assisted instruction, and the students' failure to use library is other side of challenge.

There are not enough computer labs to support the instruction (West Hararge Education Office, 2011). Therefore, for the improvement of educational instruction quality, systematic planning and skillful use of the outcomes of technology are basic prerequisites. The use of plasma for class room instruction purposes by itself is not a guarantee for improving educational quality.

Basic Questions;

- **To what extent ICT can contribute for educational quality?**
- **What are the major sources of educational quality problems in Western Harerghe?**
- **How can we maximize ICT contributions for educational quality?**
- **What policy or enabling conditions are there in GEQIP document to implement ICT for educational quality improvement?**

REVIEW OF RELATED LITERATURE

Information communication technologies are defined, as a diverse set of technological tools and resources used to communicate, create, disseminate, store, and manage information. These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephone (Blurton, 2002). In recent years there has been a groundswell of interest in how computers, plasma TV and the Internet can best be harnessed to improve the efficiency, access, quality, equity and effectiveness of education at all levels and in both formal and non-formal settings. But ICTs are more than just these technologies; older technologies such as the telephone, radio and television, although now given less attention, have a longer and richer history as instructional tools (Cuban, 1986).

For instance, radio and television have for over forty years been used for open and distance learning, although print remains the cheapest, most accessible and therefore most dominant delivery mechanism in both developed and developing countries. The use of computers and the Internet is still in its infancy in developing countries, if these are used at all, due to limited infrastructure and the attendant high costs of access (Potashnik and Copper, 2002).

Moreover, different technologies are typically used in combination rather than as the sole delivery mechanism. For instance, the Kothmale Community Radio Internet uses both radio broadcasts and computer and Internet technologies to facilitate the sharing of information and provide educational opportunities in a rural community in Sri Lanka (Taghioff, 2001).

Education policymakers and planners must first of all be clear about what educational outcomes (as discussed above) are being targeted. These broad goals should guide the choice of technologies to be used and their modalities of use. Each of the different ICTs print, audio/video cassettes, radio and TV broadcasts, computers or the Internet may be used for presentation and demonstration, the most basic of the five levels. Except for video technologies, drill and practice may likewise be performed using the whole range of technologies.

On the other hand, networked computers and the Internet are the ICTs that enable interactive and collaborative learning best; their full potential as educational tools will remain unrealized if they are used merely for presentation or demonstration (Victoria, 2002).

GROUND OF EDUCATIONAL POLICY AND PROGRAMMING IN ETHIOPIA

Responding to the challenges of the education system of the late 1980s and early 1990s and based on the declarations of the constitution, the government designed the Education and Training Policy of 1994, which intends to systematically and gradually alleviate these educational problems. Within the framework stated in the Education and Training Policy and Strategy (ETPS), the government designed the Education Sector Development Program (ESDP), which is a long range-rolling Plan, with a focus on the comprehensive development of education over a twenty-year period. The ESDP translates the policy statement into action. The main thrust of ESDP is to improve educational quality and expand access to education with special emphasis on primary education in rural and underserved areas, as well as the promotion of girls' education. The program was launched in 1997/98 with government's funding and support from ongoing donor assistance. The final goal of the ESDP for the primary education is universal primary enrolment by the year 2015 and at the same time improving quality, equity and efficiency of the system at all levels in which GEQIP is designed to implement ESDP III, (MOE, 2008).

Besides, the Ethiopian Government acknowledges education and training as the cornerstone of social and economic development. To achieve this goal the governments designed the ICT policy and integrate with educational system at different levels. According to Ethiopian ICT policy, in order for Ethiopia to move into the knowledge and information age, and be integrated into the global economy, there is a need to vastly expand educational opportunities, modernize the educational system and improve its quality; this can be achieved best through ICT application. ICT facilitates the development of education and enables both individuals and countries to meet the challenges presented by the knowledge and information age. ICT is particularly crucial to Ethiopia because the vast majority of its population lives in remote areas and continues to be disadvantaged educationally.

Therefore, the Government commits itself to the exploitation and application of ICT for educational development by ensuring ICT as an integral part of education and training at all levels (ICT4D and Action Plan, 2006). The ICT in education implementation strategy and its corresponding action plan are components of wider Ethiopian e-education initiative. This initiative forms one of the pillars of the ICT4D and Action plan 2010 (Hare, 2007). The strategy is built on three main streams. Such as Ethiopian national school net, national ICT in higher education, the national ICT education training and awareness initiative.

These three streams from the base for the implementation of the strategy across the education sector. The national school net initiative for instance is aimed at the deployment and exploitation of ICT to facilitate teaching and learning process within primary, secondary, technical and vocational schools. The ICT in higher education initiative focus deploying ICT within the Universities, Collage and research institution. Finally, the national ICT education training and awareness initiatives promote ICT awareness and literacy, livelong and adult education, distance, virtual education and learning.

The strategy also identifies goals and draws up a program and activities of each initiative. Both the national ICT for development 2010 plan and ICT in education implement strategy recognize ICT as an enabler for widening access to education for the Ethiopian population, for supporting literacy (Hare, 2007).

THE ROLE OF ICT IN GENERAL EDUCATION QUALITY IMPROVEMENT PACKAGE

Technology has revolutionized the way we work and is now set to transform education (Tearle, 2002). Different scholars argue the use of ICT (Television method of learning) from different perspectives. So, there are two extremities from importance to critics about its application in education.

According to (Amare, 1998), television is a communication medium that effortlessly transmits huge quantities of information not thought about the time of exposure. In the reverse Mcluhan(1964) in his argument of ICT (television) application in education states that as it is cool medium. It means, having the characteristics of more students involvement and participation in learning or information flow in multiple senses learning to create a more intelligent person who has the ability to deal with high level abstractions, such as configuration and patterns. ICT plays a significant role in most countries in improving educational systems and reforming curricula (Kozma & Anderson, 2002).

According to (FDRE policy document, 2002), the key role of ICT (Radio, plasma-TV) in education is to improve educational delivery system, delivery of quality education and students' intake. Mcluhan (1964) stressed the importance of ICT in education in relation to its ability to display pictures and argued that words can describe a bucket, but it is hard to tell anyone exactly what a bucket looks like without a picture.

The Contribution of ICT to Improve Educational Quality
Improving the quality of education and training is a critical issue, particularly at a time of educational expansion. ICTs can enhance the quality of education in several ways: by increasing learner motivation and engagement, by facilitating the acquisition of basic skills, and by enhancing teacher training.

ICTs are also transformational tools which, when used appropriately, can promote the shift to a learner-centered environment (Victoria, 2002). ICT facilitates the development of education and enables both individuals and countries to meet the challenges presented by the knowledge and information age.

ICT is particularly crucial to Ethiopia because the vast majority of its population lives in remote areas and continues to be disadvantaged educationally (FDRE, 2005).ICTs such as videos, television and multimedia computer software that combine text, sound, and colorful, moving images can be used to provide challenging and authentic content that will engage the student in the learning process.

Interactive radio likewise makes use of sound effects, songs, dramatizations, comic skits, and other performance conventions to compel the students. The transmission of basic skills and concepts that are the foundation of higher order thinking skills and creativity can be facilitated by ICTs through drill and practice (Victoria, 2002).

By enhancing teacher training, ICTs have also been used to improve access to and the quality of teacher training. For example, institutions like the Cyber Teacher Training Center (CTTC) in South Korea are taking advantage of the Internet to provide better teacher professional development opportunities to in-service teachers. At Indira Gandhi National Open University, satellite-based one-way video- and two-way audio-conferencing was held in 1996, supplemented by print-materials and recorded video, to train 910 primary school teachers and facilitators from 20 district training institutes in Karnataka State. The teachers interacted with remote lecturers by telephone and fax (Victoria, 2002).

There have also been many studies that seem to support the claim that the use of computers enhances and amplifies existing curricula, as measured through standardized testing. Specifically, research shows that the use of computers as tutors, for drill and practice, and for instructional delivery, combined with traditional instruction, results in increases in learning in the traditional curriculum and basic skills areas, as well as higher test scores in some subjects compared to traditional instruction alone.

THE ROLE OF ICT TO ENHANCE EDUCATIONAL ACCESS

ICTs are a potentially powerful tool for extending educational opportunities, both formal and non-formal, to previously underserved constituencies scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus. One defining feature of ICTs is their ability to transcend time and space. ICTs make possible asynchronous learning, or learning characterized by a time lag between the delivery of instruction and its reception by learners. Online course materials, for example, may be accessed 24 hours a day, 7 days a week.

ICT-based educational delivery (e.g., educational programming broadcast over radio or television) also dispenses with the need for all learners and the instructor to be in one physical location. Additionally, certain types of ICTs, such as teleconferencing technologies, enable instruction to be received simultaneously by multiple, geographically dispersed learners (i.e., synchronous learning) (Victoria, 2002).

Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the Internet and the World Wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at any time of the day and by an unlimited number of people.

This is particularly significant for many schools in developing countries, and even some in developed countries, that have limited and outdated library resources. ICTs also facilitate access to resource people's mentors, experts, researchers, professionals, business leaders, and peers all over the world (Victoria, 2002).

EDUCATIONAL EQUITY AND ICT

Given the wide disparities in access to ICTs between rich and poor countries and between different groups within countries, there are serious concerns that the use of ICTs in education will widen existing divisions drawn along economic, social, cultural, geographic, and gender lines. Ideally, one wishes for equal opportunity to participate. But access for different actors both as users and producers is weighted by their resources. Hence, initial differences are often reproduced, reinforced, and even magnified. A formidable challenge, therefore, continues to face planners of international education: how to define the problem and provide assistance for development (Hernes, 2002).The introduction of ICTs in education, when done without careful deliberation, can result in the further marginalization of those who are already underserved and/or disadvantaged. For example, women have less access to ICTs and fewer opportunities for ICT-related training compared to men because of illiteracy and lack of education, time, mobility and poverty (Tandon, 1998). Boys are more likely than girls to have access to computers in school and at home. Not surprisingly, boys tend to enjoy working with computers more than girls (Mark, 2002).

Challenges of ICT Implementation in General Education Quality Improvement Package
Although ICT (plasma-TV) assisted instruction is old technology, it is recently emerged in our country. Our education system is struggling with this newly emerged change. From the very nature of change and the country's real condition it is expected to face different challenges.

As new technologies are implemented, to be accurately aware of the social impact of learning, as well as the impact of vested interest in order to ensure the issue of quality in terms of content and its accessibility and methodology should be determined. Although the influence of IT(ICT) on education is inevitable, it is necessary to ensure that the need and interests of learners, curricula and society at large are met though careful context analysis instead of running to homogenize what is actually heterogeneous (Ali, 2005). Thus the following are some of challenges to be addressed.

Infrastructure Related Challenges

Ethiopia's national ICT policy has set the stage for growth within the ICT sector despite the country having one of the lowest penetration rates in the region. Tele-density in 2005 was 0.83 per 100 inhabitants, exclusive of mobile telephone. If the 410,630 mobile subscribers are included, the penetration rate shoots up to 1.39 per 100 inhabitants in the same period. In 2004 the country recorded 225,000 personal computers to be in use, but mainly in the capital city Addis Ababa (Annual Statistical Bulletin, 2005).

The number of Internet users rose from 75,000 in 2003 to 113,000 in 2004 with 88 Internet hosts. The usage numbers were again skewed for the urban community, which forms only 15% of the total population.

This trend is indicative of the country's infrastructure development with most of the communication infrastructure concentrated around the capital city.

Ethiopia Telecommunication Corporation (ETC) was licensed by the regulator, Ethiopia Telecommunications Agency (ETA) as the national operator to provide public switched telecommunication services, GSM 900 MHz mobile telecommunication service, Internet service, and digital data communication (ETA, 2007).

As country's educational ICT technology infrastructure sits on top of the national telecommunications and information infrastructure the adoption process faces real challenge.

Language and Contents Related Challenges in ICT Application

English is the dominant language of the Internet. An estimated 80% of online content is in English. A large proportion of the educational software produced in the world market is in English. For developing countries in Africa and Asia-Pacific where English language proficiency is not high, especially outside metropolitan areas, this represents a serious barrier to maximizing the educational benefits of the worldwide web (Ravo and Rama, 2002).

Even in countries where English is a second language it is imperative that teaching and learning materials that match national curriculum requirements and have locally meaningful content, preferably in the local languages, be developed. This would ensure that the Web is a genuinely multicultural space and that peoples of different cultures have an equal stake and voice in the global communities of learning and practice online. Particularly vulnerable to exclusion of this sort are isolated, rural populations, cultural minorities, and women in general. In Ethiopia, country with multilingual and cultural diversity the language and content is challenge.

One encouraging trend has been the emergence of national and regional school networks, or School Nets, that facilitate the sharing of content and information curriculum guides, teaching and learning resources, tele-collaborative project registries, school and teacher directories, training curricula and materials, research and policy papers, technology management guides, and start-up toolkits, among others but it is negligible in Ethiopian context. The only exceptions are of course, the handful of students who attend British and American schools in Addis Ababa. Because they have access to the language in such a way that it would enable them to make good use of it (Negash, 1990).

Capacity Building Related Challenges

Teacher professional development is the cornerstone of educational ICT use. Various competencies must be developed throughout the educational system for ICT integration to be successful. Teacher professional development in: skills with particular applications, integration into existing curricula, curricular changes related to the use of IT (including changes in instructional design), changes in teacher role and underpinning educational theories (MacDougall, and Squires, 1997). Ideally, these should be addressed in pre-service teacher training and built on and enhanced in-service.

ICTs are swiftly evolving technologies, however, and so even the most ICT fluent teachers need to continuously upgrade their skills and keep abreast of the latest developments and best practices. While the first focus skills with particular applications are self-evident, the other foci are of equal, if not ultimately greater, importance. Research on the use of ICTs in different educational settings over the years invariably identify as a barrier to success the inability of teachers to understand why they should use ICTs and how exactly they can use ICTs to help them teach better. Unfortunately, most teacher professional development in ICTs is heavy on "teaching the tools" and light on "using the tools to teach" (Victoria, 2002). Teacher anxiety over being replaced by technology or losing their authority in the classroom as the learning process becomes more learner-centred an acknowledged barrier to ICT adoption.

The Challenges Related to Financing the Cost of ICT Use

One of the greatest challenges in ICT use in education is balancing educational goals with economic realities. ICTs in education programs require large capital investments and developing countries need to be prudent in making decisions about what models of ICT use will be introduced and to be conscious of maintaining economies of scale. Ultimately it is an issue of whether the value added of ICT use offsets the cost, relative to the cost of alternatives. Put another way, is ICT-based learning the most effective strategy for achieving the desired educational goals, and if so what is the modality and scale of implementation that can be supported given existing financial, human and other resources? All these questions may not yet fully answered in the context of Ethiopia. Because nearly 84% of the current population is rural and depends for its livelihood predominantly on a traditional agricultural economy that is susceptible to persistent drought and low levels of productivity (www.infodev.org).

RESEARCH DESIGN AND METHODOLOGY

Extensive literature survey has been used for the purpose of manageability, time and finance; the study focuses on secondary data i.e. document, educational journals, government reports and earlier studies have been analyzed.

Sample and Sampling Technique

Currently the practitioner is working in Oromia region, Western Harerghe zone. This project was conducted while the worker was on job. Due to the proximity to work place Western Harerghe was purposively sampled i.e. the institutions around the job area was targeted. Beside, all the Woreda data/information and reports can be found here at zone level and this can save time and money.

Data Source

As the project relay on secondary data, published or unpublished sources, academic journals, conference proceedings and draft plans, government reports, books/texts and the earlier studies was analyzed and referred.

Data Management and Analysis

A sort of discussion was based on the collected data and results from different writers which enables the researcher to drive a conclusion and recommendation on the given topic.

ANALYSIS AND DISCUSSION

The analysis is based on different literatures like texts, research papers, educational journals and government reports on the area. According to the review in this project paper, there are different ICTs those have essential role in education. However, our discussion will be more focused on type of ICTs currently being applied in the target area.

Educational Quality

ICT can enhance educational quality by increasing learners' motivation, engagement, facilitating acquisition of basic skills that are foundation of higher order thinking and creativity by using videos and television (Victoria, 2002). According to this scholar, the paradigm shift in both content and pedagogy that is at the heart of education reform in the 21st century can be achieved by the use of ICT.

The students in TV class rooms have no place for criticizing the system inside. Thus the transmission method doesn't systematically invite students to think critically, to co-o develop the session with the 'teacher' and to construct peer relations instead of authority dependent relation (Mathewos, 2006).

The reports from schools and official educational experts in a given zone indicate that there is a significant difference in educational qualities among the schools those have been using ICT (plasma TV and radio) and those haven't yet. In Tewdros, 2006; one teacher called *Sisay* described the situation: one of the demerits of the plasma instruction is the high pacing of the program which makes the students dissatisfied sometimes disparate with the lesson since it is faster than the students understanding pace at all. In the same report the student called *Tolosa describes* "let alone instruction even hearing of news need a gap, last week in our English period the plasma teacher gave us an outline to copy on exercise book but no one of the student could do that".

As to my opinion, the practitioner want to see this situation from the angle of resistance to change which is common when a new technology, idea or outlooks are being adapted to once system. For instance the paradigm shift that follows and being applied creates a tension in students and teachers. Because, they accept a spoon feeding system in traditional class room as it is normal. Therefore the reality on the ground in a project area reflects that ICT has a very good contribution to GEQIP.

Educational Access

According to Ethiopia ICT for development action plan, 2006; ICT is crucial particularly for countries like Ethiopia as the vast majority of its population lives in remote areas and educationally disadvantaged.

ICTs are a potentially powerful tool for extending educational opportunities for previously underserved scattered and rural population, groups traditionally excluded from education due to cultural or social reasons. One defining feature of ICT is their ability to transcend time and space. One professional person can deliver his/her lecture to a million students at the same time then facilitates an access of good quality education (Victoria, 2002). The ICT has also a role in facilitating open and distance education for teachers in order that professionals could develop skill on job without affecting teaching learning process.

Before the introduction of plasma-TV in western Hararghe, the students have been learning with the less experienced teachers, almost no lab access and poorly organized schools. However, in the national examination the students compute with those students attend in mission, private, American and British schools, where ideal facility can be provided. This made the students less competent in the national exam. But now these entire students are attending at least the same lecture from the same teacher at the same time. There are 12,435 male, 5,658 female and total of 18,093 students attending different schools in a given zone. Unfortunately, I have not encountered with the research report that argue on whether ICT (plasma-TV) and radio facilitates access or not. As to me this is a great change and contributes significantly to GEQIP by facilitating access to all regions.

Educational Equity

A matter of equity in relation to ICT specially radio and plasma-TV is dependent factors on different disciplines. For instance if there is wide disparities in access to ICTs between different group within the country, it may widen the existing division. However, ICTs have a potential to serve equally all groups at a time (Hernes, 2002).

I agree with the above idea because ICT doesn't have a natural behavior which is comfortable for some group and not for others. Therefore, provided that social, economic, political and technological accessibility challenges avoided unquestionably, ICTs can support GEQIP. This fact holds true for western Harerghe in spite of less female enrolment generally at all level.

Educational Efficiency (Internal)

It is known that plasma mode of instruction is functional in grades 9 to 12 in western Hararghe. The repetition rate of grade 9 in 2009 and 2010 was 22.3% and 16.2% male and female respectively with the cumulative of 19.3% where as 10.3% and 4.6% male and female respectively in grade 10 of the same years with the cumulative of 7.4%. The cumulative rate of grades 9 and 10 repetition rate is 13.3% which is slightly exceeds the regional rate (10.5%). The dropout rate of grade 9 in the years mentioned above was 25.8%, 30.5% and 28.2% male, female and the average of two respectively. According to the review report of west Hararghe education office the plasma coverage of the zone is 76.19%. Therefore when we discuss about the impact of plasma we have to relate with its coverage in order that we can measure the impact accordingly.

In addition west Hararghe is a food insecure area with highly varied geography settlement. These two factors are known to affect the enrolment significantly.

Major Source Of ICT Educational Quality Problems In Western Harerghe

There is various sources affect ICT educational quality in western Harerghe Zone like attitude, commitment and skills or capacity. Regarding attitudes the school directors and deputy education Head of Western Harerghe stated that different attitudes among the stakeholder on implementation of ICT (plasma-TV and Radio), some teachers believe that ICT replace them and make teachers idle and thought of plasma and radio instruction is a ready- made that satisfy the educational quality demand were the major sources of the problems. Similarly, some officials and educational experts' loss of commitment and Lack of experts and teachers operate properly and maintain ICT were playing the same role.

Methods of Maximizing the ICT Contribution for Educational Quality

Some students and teachers suggest that the priority should be given to ICT from the very planning time in school, woredas and zonal offices. These priorities should be in terms of manpower to solve the problem of skill gap, in input supply especially, hardware and software those assist the lesson. Due to electric power some schools doesn't have both networked and hardware materials. To fill such gaps generator and print material supply is optional to reduce the problem (personal communication).

Ways of Changing Attitude of Teachers and Students'

According to WHOE Vice head, teacher guide of the plasma textbook contains only lesson number, objectives of the lesson and difficult concept and problem not all concepts and contents of the lesson. There are a lot of new things that student watch and hear, which is not part of teachers' guide. Therefore, it is better to prepare in collaborative manner and students should have a plasma text book. This may help students to be motivated and respond during the lesson. The one way pedagogical practice of the plasma instruction should be intervened in such a way that it redefines the role of class room teacher. The training in philosophical ground of televised lesson should be lunched for students, teachers, principals and community at large for complete attitudinal change (school principals).

SWOT Analysis

Strength

In spite of the challenging topographical location of western Hararghe which makes transportation difficult it has been done very good. For instance, the plasma coverage of (9-10) grades is 76.19% currently which is far greater than that of the region 45 %(9-10) (ESDP IV, 2011). Even the rest 23.8% schools are newly constructed and the purchasing materials are under process. This promising issue and current coverage reveals that there is strong political commitment of educational leaders and related structure.

Weakness

The radio broadcasting programme is relatively cheaper than plasma-TV but only 72.89% primary schools report it. In case of plasma-TV, the educational leaders couldn't inspire different stakeholders to make the ICT use public issue rather than only school community. In some areas the teachers students attitude is not initiative. Example teachers thought as the TV could replace their role, which could not be in reality (Whoe, 2011). The total number of manpower in a given zone are 7119 among these 182 are experts on woreda and zonal offices. Among 182 experts only 17 are working in ICT position in zone woredas and schools. However, no one of them is ICT graduate from college or University but only short term trainers.

This indicates that there is poor technical assistance to help students in order that they exploit the potential of ICT for educational practices and purposes. The present manpower in ICT discipline is not qualified enough to guide students to search and use every opportunities of ICT from educational perspective.

In 21 high schools there are only 6 computer labs. Each lab hosts 20 desktop computers, totally 120 computers which is far small number than the target student in the schools. Even this small number of computers is not being used efficiently and effectively due technical problems that arise from lack of manpower.

Both the number of labs and computers are not promising to satisfy the students need. In reality the presence of computer and internet lab supplements the lesson which is given in plasma. However, this is true in only six preparatory schools in the zone. This all contributes for the low quality of ICT application in education in western Haraghe. The in availability of suitable libraries in schools and students tradition to use library contributes to the weak side. Generally, low awareness about the use of ICT for education in the local society hinders the support of families towards the system.

Opportunity

In west Hararghe the society's sensitivity towards technological adoption is good. For example now a day the mobile telephone is common for Hararghe farmers may be due to different exposure to border trades. So, having such a society is a fertile ground for the dissemination of ICT technology and trains its application in educational area. The use of TV-satellite in Hararghe area was common even before the emergency of VSAT as educational aid and package. Therefore, knowing that how to watch TV and interpret the message paves the way for plasma usage for education and interpretation.

Threats

High pace of plasma instruction, limited time of classroom teacher involvement, the irreplaceable lesson and dependency to electricity may remain the future challenges if not the mode of instruction and other infrastructures revised.

The incomplete coverage of the plasma –TV to all schools in the project area and others make a difference among students which affects the access and quality of education. The interdependency of input supply process which now held by MOE and MOICT also hinders the efficiency of planning and implementing ICT to education. Western Harerghe has a variety of geographical locations. Therefore, some schools are found in remote areas far from main roads and with poor facility to maintain trained teachers. This may continuous as a natural gab to solve the manpower problem in a project area. There are also different threats those directly related to the technology itself.

For instance, satellite TV transmission leads to have apparent uniformity of teaching and learning because there is a wide gap to fill for maximum benefit of students. That is, there is uniformity of transmission throughout the country from the same center but not uniformity of benefit from it because of individual difference among target learners. The learners come to the educational setting with many different experiences, ideas, and approaches to learning but they are forced to learn only through one method during satellite TV transmission. The way by which plasma TV transmit the lesson doesn't give an opportunity for student participation in effective manner. They have hardly the right to assert, defend or question any factual or normative claims since the situation almost was not conducive, cooperative and collaborative learning experiences. English language ability of the students affects the understanding, critical and creative thinking skills during the instruction in the project area.

CONCLUSION

In fact the ICTs (plasma TV and radio) are contributing a lot in improving the quality and equity of secondary schools in case of plasma and elementary schools education in that of radio program. Because, this technology bridge the gap between the poor, rich, privileged, non-privileged, rural and urban. It equalize educational opportunities for all, the students in deprived areas where educational resources are not available get the same quality of education as their counterparts, and the best teacher is equally available for every student in both remote areas. i.e. Boke woreda of west Hararghe where no access of road get equal chance with that of capital city counterpart students.

However, current ICT application has its own demerits. These are project area specific and the other is from the very nature of current ICT application in the region.

- **The ICT materials like plasma-TV, internet labs, computers and specialized libraries for ICT lessons are not available or insignificant to students' number and need.**
- **The institutional readiness in capacity building and skilled manpower is currently not promising in relation to high skill gap in the project site.**
- **The ICT program in GEQIP is not funded like other components. This puzzles the program activity compared to other components and the interdisciplinary relation with other component is low.**
- **Due to its design the ICT application merely confined in presentation and demonstration. It is not interactive, collaborative and practical. These might deteriorate the pedagogical makeup and student centeredness of the lesson.**
- **The zone plan and report doesn't give enough coverage as that of other components of GEQIP in project site.**

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