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STUDENT CHARACTERISTICS AND PERCEPTION TOWARD APPLICATION OF PLASMA TV TRANSMISSION IN CASE OF WONJI SECONDARY AND PREPARATORY SCHOOL OF EAST SHOA ZONE

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Student Characteristics and Perception toward Plasma TV Instruction in Case of Wonji Secondary and Preparatory School of Adama Woreda East Shoa Zone

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Acronyms

AAU- Addis Ababa University

Dep. - Department

EMA – Educational Media Agency

EMP – Educational Media Program

FGD-Focus Group Discussion

ICT – Satellite Television Instruction

ITV-Instructional Television

MOE – Ministry of Education

PTV-Plasma Television

TGE – Transitional Government of Ethiopia

TV – Television

Abstract

The major purpose of this study was to investigate the application and perception of students toward PTV instruction in the case of Wonji secondary and preparatory school. The study further examined the factors that affect the perception of students, advantage and disadvantage of PTV instruction. To realize the purpose of the study, multiple case study was used and the necessary data were secured from 4 chemistry teachers and 20 students; from grade 9 and 12, 2 directors from high school and preparatory level, one EMA manager and one chemistry expert of EMA. Data were gathered through interview, FGD, observation and data file. In depth interview employed for all participants, observation used for site visiting and classroom observation. FGD was used only for students for further identification of the application of PTV and perception of students toward PTV instruction. File data were used to secure information on selected participants (teachers and students). The data were analyzed and interpreted through categories analysis method by using heading and narrative description way. The findings showed that: high achiever students had positive, low achievers had negative; and medium achievers developed both negative and positive perception toward PTV instruction. Moreover, the finding showed that, there was a technical problem in the application of PTV instruction. Several factors like language and speed of PTV teachers were having influence on the development of positive perception among students regarding the application of PTV. On the other hand, PTV instructions have several advantages like for demonstration of complex laboratory activity, gives the standardized education all over the country. Thus, instead of this effective application of PTV and to enhancing positive perception of students toward PTV, the PTV teacher should concern the individual difference of students that exist between them in teaching-leaning process .The concerning bodies including Wonji General Secondary School, EMA, MOE and Policy designer should give attention for PTV application in teaching learning process.

CHAPTER ONE: THE PROBLEM AND ITS APPROACH

1. Introduction

1.1. Background

Education is a cornerstone for economic, social, political and cultural development of any country. "Education is unique investment in the present and the future" (Aggrawal, 1996). Through education individuals gain knowledge, develop skills and attitudes, which enable them to meet certain need of their society. However, this can be achieved if and only if all concerned bodies are committed to improve the quality of education so that the acquisition of knowledge, skills and attitudinal change can address the development goals of the country.

The educational stem of most developing countries especially in Sub-Saharan Africa seems to be addicted to quality deterioration and high rate of illiteracy. As we know modern education in Ethiopia was started before a century for the purposes of brining modernity, reducing illiteracy and providing quality education for the citizen. However, the past education and training policy lacks quality, relevance and diversified objectives that have lead to high educational wastage (Education and Training Policy of the Transitional Government of Ethiopia (TGE), 1994).

Owning to these facts, the Ethiopian Government has launched the educational and training policy since 1994, Promising result are emerging with regarded to educational access, equality and relevance despite the fact that too much remain to be done (Ali, 2005). To ensure further improvements in areas of accessibility, equality, quality and relevance different reforms are being done at the primary, secondary schools and teachers education system. Moreover, the government has given more attention to the expansion of education for the past years .But at present new initiatives is being conducted in view of improving the "quality" of education (Ali, 2005).

Actually, quality is a relative term and difficult concept to define; educational quality may rest mainly on the nature of the teaching-learning process in the classroom. Quality of education can be determined by training and qualification of teachers, nature of school curricula, instructional technologies and facilities used, the motivation, attitude and perception of students to learn, teacher level of commitment to the profession and many other related factors (Bridges 1998, in Tesfaye, 1990).

One of the ways to get quality of education is through the use of technology appropriately. "Educational quality is critical ingredient in boosting economic growth. The information and communication technology accelerate progress toward good quality education (Amartya, 1999).

Thus, "all governments aim to provide the most comprehensive education possible for their citizens within the constraints of available finance because of the pivotal position of ICT in modern societies ,its introduction in to secondary school was highly emphasis on any political agenda" (UNESCO,2002). Today, educational system around the world is under increasing pressure to use the new information and communication on technologies to teach students the knowledge and skills they need in the 21st century (UNESCO, 2002).

Owing to this, the Ethiopian Government used educational technology called satellite TV instruction or plasma, to promote educational quality for secondary schools. The Educational Media Agency has launched teaching ICT (satellite TV instruction) in 1997E.C for grades 9-12 under the auspices of the ministry of education (MOE), (ሰብስቢ,1992). The educational transmission were prepared based on Ethiopian educational curriculum is South Africa and Canada,(Ali, 2005). The transmission system is center from Education Media Agency (EMA) and a Satellite Network system. The transmission has been selected and beginning delivered to grade 9 and 10 students focusing on six subjects namely Chemistry, Physics, Biology, Mathematics, English and Civic and Ethical Education in 2004,(ትምህርት መገናኛ ዘዴዎች ድቪዥት (መስከረም, 2000)). EMA ICT Dep. gave information for me, for grade 11 and 12 with additional subjects such as Business, Economics and Technical Drawing.

The aims of the selection of six subjects for all grades are for developing language skill, to enhance application of language, for understanding other subjects and for study purpose. Moreover, this program were started to help students for solving problems as individual and group by using quality TV presentation that included animation ,geometry , picture etc. and for demonstration of different experiments through plasma TV screen .It was also meant to increase the understanding of citizens about democracy for individual and nation and nationalities (ጴጥሮስ, 1996).

As I get information from EAM of ICT Dep. at present regional level around 775 high schools have dishes and 16,686 plasma displays of 42 inches with their respective box have been installed

and where there is no electric power generators were installed in 428 schools. 12 satellite TV channels and the department of ICT started computer assisted instruction (digitalization) use to 2 pilot website for 4 schools.

However, since it is new innovation, the area needs deep and wide investigation on its implementation and delivery in various ways .This paper particularly focuses on the investigation of the application of PTV and the perception of grade 9and12 students towards application of plasma TV transmission.

Statement of the Problem

For the improvement of educational instruction, systematic planning and skillful use of the outcomes of technology are basic prerequisites. Some researchers have already conducted studies on the use of plasma TV instruction in Ethiopia. For example, Getnet (2007) indicated in his findings from M.A. research study which is entitled "The Attitudes of teachers and students toward using plasma TV for instruction" that the majority of his respondents did not have positive attitude toward it.

In addition Ali,(2005), conclude that, based on his findings from M.A. research study which is entitled" Teaching from and Learning with Electronic Media", about the overall patterns of classroom interactions in the televised and non-televised lesson in the research site and he developed four major themes, teaching as transmission, disaggregating learning, de-professionalizing teaching and commercializing learning.

Another work was that of Dr. Amare Asgedom (1998 (b)).In his article "A habit of learning with a least effort: TV method of learning", he indicated that the technology of TV is a reflection of the application of the least-effort principle in education, this is due to transfer of learning the fact that students avoid to learn materials that require higher mental effort.

Even though these works and other from the wider literature are a good deal of contribution to the study about plasma TV instruction, no study was conducted on the situation of plasma TV application and students' perception toward it in Wonji Secondary and Preparatory School. Hence, the researcher believes that her case study would fill the existing gap. To this end, the following three basic questions were set:

1. How do you see the application of plasma TV instruction in the Wonji general Secondary school?
2. How do you see the perceptions of students toward the application of plasma TV instruction in relation to their characteristics like achievement level, grade level, sex and residence?
3. What are the major advantages and disadvantages of application of plasma TV for instruction purpose?

1.3 The objectives of the study

The study was having both general and specific objectives:

1.3.1. General objective

The general objective of this study was to understand the application of plasma TV transmission and the perception of students who have been interest to continuously expose for educational TV program as their characteristics in the general Secondary School of Wonji Adama Woreda, East Shoa Zone and to suggest feasible recommendations based on the finding.

1.3.2 Specific objectives

- To examine the application of plasma TV transmission in school situation.
- To reflect the perception of students toward the application of plasma TV transmission based on their characteristics such as achievement level, grade level, sex and residence.
- To identify the factors that affect (influence) the perception of student toward the application of plasma TV instruction.
- To determine the advantage and disadvantage of the application of plasma TV transmission in teaching learning process.

1.4 Significance of the Study

The researcher believes that the output of this research study would have the following significance:

1. It would inform the concerned body about the application of plasma TV instruction
2. It would inform the curricula experts, educational media designer and other educational bodies at various levels how students learning are affected by factors related to satellite TV instruction.

3. It would help school teachers to understand different perceptions of students toward the application of plasma TV transmission.
4. It would help curriculum developer to consider the individual difference in learning.
5. It may initiate other researchers to undertake further research in the area.

1.5 Delimitation of the Study

It would have been better if more secondary schools were included in this study. However, to make it manageable, the researcher delimited the scope of the study in to only one secondary school, namely wonji secondary and preparatory school.

1.6 Definitions of terms

1. **Application of Plasma TV transmission**: - It refers to the using plasma TV transmission to conduct classroom teaching and learning.
2. **Plasma TV:** - It is an educational medium used to deliver education for Secondary School students through satellite by 42 inch Television.
3. **Perception**: - It refers to views and opinions of students concerning to the application of plasma TV instruction in teaching and learning process.
4. **Characteristic of students:** - Refers to individual differences such as sex, educational level, achievement level and residence of students.
5. **High achievers:** - Refers to those students whose scores are 75% and above.
6. **Moderate (Average achievers):**- Refers to those students whose average scores were between 55% to 74%.
7. **Low achievers**: - Refers to those students whose average scorers are below 55%.

1.7. Organization of the Study

The main objective of the study was to investigate how the students perceive the transmission of plasma TV and what is the application of plasma TV in teaching-learning process. In this regard, the first chapter of this paper introduces background of the study and its approach; the second chapter treats the review of related literature; the third chapter deals with the research design and methodology; the fourth chapter presents data analysis and interpretation of the results. Finally, the last chapter deals with the summary of major findings, conclusions and recommendations.

CHAPTER TWO: RELATED REVIEW LITERATURE

Under this section, I have discussed evidences from various literature related to educational Technology, learning theories, critics of the applications of plasma TV, Perception of students toward plasma TV instruction and research experiences in Ethiopian

2.1. Technology and Media in Education

Educators all over the world have long looked for the emerging technologies in order to use them as a tool for teaching - learning purpose. Technology is viewed as a catalyst for engaging teachers and children (students) in the excitement of learning aid for making that learning more relevant to the 21st century. But technology is not a magic bullet; it is only one necessary ingredient in reform efforts (Haddad and Drexler 2002).

Now technology is becoming more common in schools. Its potential for enhancing teaching and learning is being recognized. However, it is structured around the needs of the teachers and students. In other words, most educators are using technology to answer the question like how can technology help a teacher and students in teaching-learning processes? In the instance where the students are the center of attention, technology is catalyst for educational change. Its absence would make a significant difference to the educational process; because, technology is an integral part of a well–thought out-system, not merely a teaching aid.

Most educationalists generally consider educational technology as the use of microcomputer and audio-visual equipment. Most of them regard educational technology as the materials or equipment. But, some of them state that educational technology is a complex integrated process whereby problems connected with all aspects of learning are conceptualized, analyzed, established and resolved through interaction between peoples, techniques, ideas and resources within an organizational frame work (Yapi,1997 cited in UNESCO, 1997) .

The terms like audio-visual aid, audio-visual materials; audio-visual media, communication technology, educational or instructional media, and, learning resources broadly speaking, mean the same thing. The use of newer terms" like educational technology" or "instructional technology" is primarily due to the dynamic expansion of programmed learning, computer assisted instruction and educational television (Aggrawal, 1996).

2.1.1 Educational Technology: an Overview.

The term" Media" is defined as the means for transmission or delivering messages. Media included such things as prints, graphics, computer, internet, stimulating game, Television etc (Locatics and Athinson, 1984 cited in Aggrawal1996).

Educational institutions, left to itself may not be successful in achieving the educational objectives of the developing societies without the support of the new media. New media implying mass media as channels of education gain relevance from their capacity to disseminate information to great number of people (masses) and make the present educational programmes more effective and meaningful (Aggrawal,1996).

Electronic media affect the sensibilities greatly because they tend to massage the sense. Thus, the media is not only disseminating the message but also massaging the sensory organs and stimulates them to respond actively. Therefore, it is important that the mass media be utilized in the classroom teaching so that, students may obtain sensory stimulation as a part of the process of instruction. In general, educational technology is, as commonly understood, is the application of technology in the field of education to improve the process of teaching and learning.

2.1.2 Levels of integration of Media and Technology in education

There are different levels of integration of media & technology in teaching- learning process such as learning 'about' technology, learning 'in' technology, learning 'with' technology and learning 'from' technology'.

A. Learning 'About' technology: - At this level, technology is the topic rather than the mechanism or context for learning. Because, according to this level, "Technology" serves as nothing more than content. In this level the unit of analysis is becomes any change in knowledge and the evaluation of corresponding cognitive and affective variables associated with technology (Schrader, 2008).

B. Learning 'in' Technology:-in this approach technology is not consider to be a topic or tool, but the environment in which learning takes place (Schrader, 2008). It implies focusing on dynamic interactions within the virtual world where actions represent the extension of user intent (Schrader and Mc Creery, 2007 in Schrader, 2008). For researcher, some indicators of user

interaction within virtual space might include: conversation or user dialogue, the flow of information, the number and type of interaction, the nature of inquiries, and users navigational behavior (Schrader, 2008).

The remains two approaches for using media and technology in schools, students can learn "from" media and technology and they can learn "with media and technology (Reeves, 1998). It is based on these two major approaches that the various technologies available are used in schools or other educational institutions where they are believed to enhance the teaching learning process. .

C. **Learning 'with' technology**:-

The idea of learning with technology, refers to the fact that the effect of technology is related to transfer as a consequence of cognitive residue that remains from the human-machine interaction. Learning with technology implies that the outcomes are relevant only in conjunction with the process of interacting on a cognitive level with the technology. From an instructional sense, this level of integration requires new roles for teacher as well as different tools and application of those tools (Schrader, 2008).

Learning 'with' technology is referred to in terms of cognitive tools and constructivist learning environments (Reeves, 1998).Cognitive tools are useful to enhance the cognitive powers of human beings during thinking' problem solving and learning. It is allowing humans to 'off-load" memorization or other mental tasks on to an external source (Reeves, 1998). In the cognitive tools approach information is not encoded in predefined educational communication which is then used to transmit knowledge to students. Instead of specialist such as instructional designer shaping students' learning via prescribed communications and interactions, media and technology are given directly to learners to use for representing and expressing what they know. Learner themselves function as designers using media and technology as tools for analyzing the world, accessing and interpreting information, organizing their personal knowledge , and representing what they know to others (Reeves , 1998) .

D. Learning 'from' Technology: - the principle of "learning from technology is students learn from the technology. The role of the technology might serve as the instructor or more fundamentally the delivery mechanism for content. Learning from technology implies a change

in knowledge as a consequence of technology use. The unit of analysis associated with learning from technology related to common cognitive and affective variables (e.g. motivation, knowledge or affect) is the same to "learning 'about' technology" (Schrader, 2008).

Learning 'from' media and technology is often referred to the use of instructional TV; Computer based instruction or integrated learning system (Hannafin, et.al in Reeves, 1998). According to these authors, the foundation for the use of media and technology as "tutors" in schools is "educational communication," that is the deliberate and intentional act of communicating content to students with the assumption that they will learn something 'from' these communication.

2.1.3. Learning from Satellite TV Broadcast

Television, whether in the form of cable or satellite, has been used in different parts of the world for educational purpose since its inception in the 1930's. TV has served for many formal and informal education programs in various methods. During the 1950s, the medium was monochrome , restricted largely to "line of sight" reception with a limited geographical area , not recordable , capable of only one – way transmission, and very expensive to produce (Tiene,1998; in Fathe,2007). However, by the year 1999, TV had developed a high definition signal with accurate color radiation, could be delivered across vast distance by a variety of different technologies in ways that preserved the fidelity of its signal, could be tape–recorded for convenient later use, could provide "interactive" capability on two –way transmission, and could even be produced on very modest budgets (Tiene, 1998; in Fathe, 2007).

In addition to the improvements explained above, in the last two decades of the 20th century the merging of different technologies to produce a new discipline was made. This new discipline is called "telemetric", which is the convergence of several technologies, but notably telecommunication informatics. Among these, satellite TV data transmissions to use telemetric based technologies to establish network of innovation centers across different areas (Wheelers and Winders, 2001).

The technological wave is now driving major changes in the way education is produced and delivered. At the heart of this change is the convergence of the once distinct media of image, sound, books computer networks in to digital multimedia. This is making the world's knowledge base accessible anywhere on the planet through satellites, coaxial cable, fiber optic cable and

conventional copper wire through new technologies to pump large amounts of information down the "last mile" (Oxford , et al, 2001).

Satellite TV transmission is among one of the recent instruction at technology developed and employed for educational purposes. Satellite TV is one of major instructional tool, has often been mentioned in higher conferences in only about recent ten or fifteen years. Faculty members, school administrators, researchers and students are really excited to have satellite communication systems developed and extend their distance learning programs and other educational programs (Wang, 1995) He further added that as a developing medium, satellite, especially, telecommunication satellite is rapidly raising on the horizon of education field .`

2.1.4. Concept and Definition of Instructional TV

Many telecasts, in addition to programs exclusively for schools, can be considered educationally in general way and viewed by pupils with advantage. Educational Television is sometimes applied more narrowly to cultural and educational programs for at home viewers in contrast to "instructional television (ITV), which is the term used to describe formal school, college or university instruction via television (Murphy and Gross, 1975).

Instructional Television includes programs related directly to an organized programs of formal instruction and is directed to individual viewers who come under informal education programme (Sampath, et al, 1984). ITV is meant to describe the use of TV for formal course regardless of age, or grade level and for in school instruction in part of course for direct teaching , or for facilitating lecture- demonstration (Brown 1964 in Behera,1995) .

The outstanding development in modern education is the increased use of supplementary devices by which the teacher through the use of more than one sensory channels helps to clarify , establish and correlate accuracy, concepts, interpretations and appreciations; increased knowledge, rouses interest and even evokes worthy emotions and enriches the imagination of children (Kinder , 1959) . The levels at which learning take place are categorized in to three: direct experiencing, vicarious experience and symbolic experiencing, this implies that audio-visual materials are quite helpful to enrich meaningful associations. Thus, teachers should appeal to the mind chiefly through the visual and auditory sense organs, since it is possible that 85% of our learning is absorbed through these (Kinder, 1959).

However, in the application of ITV we do not intend to do anything, which the good average teacher could do her/ himself. We must do something extra. First broadcasters of instruction should ascertain how a specific subject is handed in the classroom. What material is normally covered in the curriculum, and ask teachers what TV could do things they are unable to do themselves. Only after receiving answer to question, they prepare the programs (Cassirer, 1962).

The good instructional telecast takes full advantage of the unique audio- visual characteristics of the TV medium, leaving to the classroom situations those things best taught and learned in the conventional classroom situations and assigning to the television medium those parts of the total teaching – learning processes which are appropriate to the television medium (Diamond, 1964). Utilization of mass media (ITV) for direct teaching purpose arises when specific educational tasks cannot be met by conventional mode of teaching. The question would then be: How ITV can be effective? To what extent they can be successful in attaining educational objectives? How efficient are they? However the answers to these questions cannot be given in a general way. There are a number of things that ITV can do as well or better than the average teacher and traditional teaching methods and facilities.

Many educators claim that whatever can be taught in a classroom can be taught by television. One can hear what TV teacher says, and can see him and what he /she is doing as well as or even better. On the other hand, there are a number of things that ITV cannot do as well as the classroom teacher. As there are a number of things ITV cannot do, our decision to use this medium will depend on the kind of education, the kind of objectives, subject matter, audience and so on, with which ITV will be expected to deal with (Waniewiez,1972)

Television is particularly considered good medium for demonstrations than in a face – to face situation, since the camera can look down a microscope, peer in to corners give close – ups of things which could never be so closely or accurately observed in a normal classroom situation (Clark and Starr, 1986). Besides, the voice and personality of effective teachers will be available to greater audiences. Specialists in all fields of endeavor will be seen and heard all over the country. Television as a medium of instruction is useful because of its effectiveness in directing and controlling the attention of the pupil (Cassirer, 1962). Further Television – magnifies objects in a clear accurate and telling way and encourage sustained attention, careful observation and attentive listening.

The application of telecommunication media needs basic understanding of educational goals and objectives before looking for the specific tools that will be used for achieving those objectives. Further, several elements related to total educational situation such as specific community and societal needs, the finances of the local schooling system, the specific characteristics of the students in the learning situation (age, economic background, academic abilities, and others) and the status of the present schooling situations plan and facilities, special programs, community involvement, strength and weakness of the teachers (Wood and Wylies, 1974).

Securing the administrative support including from top level to low level of educational management has determinant influence on the success of planned instructional media. It is also pointed out that plans must be outlined for the specific uses of various media regarding what jobs the media can do , the best way of utilizing them and the nature of the learning situation large group instruction, small group patterns , and individual instruction. Specific curriculum planning procedures must be initiated with the team members, which involve curriculum administrators, consultants, teachers committee, the Television teachers or content authorities and the media production staff. Television as a means of instructional media was inspired not by any particular shortage of qualified teacher and classroom space, but by a desire to exploit the contribution which Television can make, even to best classroom (Cassirer, 1962).

2.2 Historical development of Educational Television

The historical development of ITV at a worldwide and its inception in the educational system of our country is discussed hereunder:

2.2.1 Instructional Television in the world wide context

The history of television shows that it is a very powerful, informative socializing and mobilizing force (Aggrawal, 1996). TV established itself as a potent medium of information, education, entertainment throughout the world (UNESCO, 1964). Most of the countries of the world have gone for television to solve their difficulties and problems relating to education (Aggarwal, 1996).

TV is one of the most significant technological developments for the rapid expansion of education. It has been treated as a very sophisticated medium of communication that begins with

intelligible transmission and end with intelligent reception. As a versatile, dynamic and powerful medium, the educational use of Television not only encourages the pupils but demands a continuous appraisal of the way in which it is or it may utilize (Behera, 1995).

John Barid was succeeded in transmitting television for the first time a visual across few feet in 1916.Then Marconi of Italy also tried the experiment on television continued for a decade On second November 1936, the British Broad- Casting Corporation (BBC) inaugurated the first public telecast. Suddenly, on the first October 1939 the BBC TV closed down and did not reopen till of the June 1947 (Mohanty, 1984).

At first television was confined to its industrial base in major countries of northern Europe, North America and Japan. It was established in almost every economically developed nation of the world. At last, the establishment of television stations has been reality in what are known as technically under developed countries throughout Asia, Latin America and Africa.

Direct television started four decades back in countries like UK and U.S.A (Aggarwal, 1996). The first pilot experiment in the use of school Television in UK was carried out in May 1952 by British Broadcasting Corporation through close- circuit transmission (Cassirer, 1962). In September 1948, the Federal Communication Commission imposed a "freeze," a legislative action on all further television stations on the air in the USA, of which only one (the Iowa State's Stations) was licensed to an educational institution (Schramm, et .al 1963). The USA experience shows that the first noncommercial educational television station to go on the air was at Houston, Texas in April of 1953. However, Iowa State University was operating a television station several years prior to 1953 with on a commercial television licenses (Kieffer and Cachran, 1962) such attempt really signify that television as an instructional device has relatively long years of age in developing nation.

2.2.2 ITV in the Ethiopian Context

Educational Media Agency started broad casting educational television program a year after television was introduced in to the country in 1965 (ትምህርት መገናኛ ዘዴዎች ድርጅት, 2000). The lesson transmitted were physics grade 11-12, Biology grade 10, Geography grade 9, English grade 7-8 and practical chemistry grade 8, carried out through the use of the facilities and transmitters of the Ministry of Information (ትምህርት መገናኛ ዘዴዎች ድርጅት, 2000). The purpose of

the program was to overcome the shortage of text book, teaching aid, and available human resource (trained person). However, the educational television transmission only reaches the school found in Addis Ababa and around it. In this case, the educational television service was limited at that time (ት·ቢሮ1992). Later on the EMA center by opening own station transmitted educational program broadly. Based on this, from 1965-1975, the educational television program was transmitted the different subjects and for the different grades, which are indicated in the following table:

Table.1: subject matter broadcast through educational TV between 1965-1975 in Ethiopia.

No	Educational level	Types of subjects
1	High school (Senior Secondary School)	English, Mathematics, Geography, Biology, Physics, Practical chemistry, History and French,
2	Middle secondary school	English , Science, Mathematics, Geography and Health
3	Primary school	Health, Geography, English, Science and Social Studies

From, (ት·ቢሮ ,1992).

However, due to several problems in the years 1969 through 1997educational TV programs focused mainly on primary school education. In1980, the transmission program closed down because of certain problems. But during 1986 the transmissions reopened for grades 7 and 8 in the new form up to the current educational television utilization system (ት·ቢሮ, 1992).

Educational television for long period of time serves as a supplementary program which means it was used as teaching aid to supplement the classroom teacher led instruction up to the new educational system launched plasma television for instructional system.

In recent years, due to educational expansion emanated from universal education in the country, 'enrollment rate of students has increased year after year. This enormous number of students obviously needs more teachers, teaching materials, classrooms, and demonstration devices. The educational system would underline the application of educational television in order to promote

quality, expansion and relevance of education shifting from aiding classroom instruction in to the leading position (TEG, 1994). Generally plasma television has been massively used in the secondary schools (grade9-12) subject as regularly classroom lesson (a direct teaching medium), out of the total time for a period, 75 % of the teaching learning process is occupies by plasma TV where as the remaining 25% is left for the class room teachers of the country (Fikre,2009) .

2.3 The Importance of Media and Technology in Education

Educational media has an important role to play in furthering education and development. These various forms of media and technology have been used for educational purposes for all over the world. ICT plays significant role in most countries in improving educational systems and reforming curricula (Kozma and Anderson 2002). Many countries have attempted to provide the major portion of instruction one or in a combination of any 'old' or 'new' technologies available and have succeeded in attaining the desired objectives. Government and other concerned bodies, especially in developing countries are nowadays giving more focus to the adoption and utilization of different technologies (ICT) in to the educational system.

The potential of educational broadcasting cannot be over emphasized for accelerating the pace of national development in general and for bring about qualitative as well as quantitative improvement of education in particular (Mohanty, 1994). Different ICTs have the potential to contribute to different faces of educational development and effective learning: expanding access, promoting efficiency, improving the quality of learning, enhancing the quality of teaching and improving management system (Haddad and Drexler, 2002). Under this section, some of the major importance of media and technology in education will be reviewed.

2.3.1 Improving Educational Access.

Media and technology (ICT) improve or enhance educational access for all over the world. Because the importance of ICT they can provide access for large audience to interesting and relevant educational material at a time. It is potentially powerful tools for extending educational opportunities, both formal and non formal (Tinio, 2002). Generally, instructional television helps in enhancing access in education. It caters to the explosive increase in student number (Koul, 1987, in Behera, 1995). Many developing countries have been attempting to provide "education for all" through the expansion and extension of educational facilities (Teshome, 1998). The main

reason for such concern is related to the "belief that "education is associated with the nations' of social welfare and economic development ". But, in Africa most of children found out of school for long period of time. For instance, in 1990 alone, the total number of children who were not enrolled in schools amounted to 130 million, while this is estimated to increase to 145 million in 2000 and 162 million in 2015 (Mike 1987 in Teshome,1998). To overcome this problem educational broadcasting is taken as an alternative solution by stressing its potential to mass produce and distribute high quality and expert prepared learning to thousands of learners all over the land whether they are at work, school, and home or even live on the peak of a mountain (Lock heeds, et al, 1992).

Evidences suggest that the trend to universalize primary education by making additional uses of media will continue beyond the year 2000 particularly in sub-Saharan Africa, South Asia, the Middle East and North Africa as demographic pressure on enrollment will continue to be strong in these regions (Teshome, 1998). One of the defining features of ICTs is their ability to transcend time and space which is termed as "any time" and "any where "(Tinio, 2002). The capacity of ICTs to reach students in any place and at 'any time' has the potential to promote revolutionary changes in the traditional educational paradigm (Haddad and Drexler, 2002).

2.3.2 Promoting Equity in School

Experience in developing countries suggests that wide disparities have continued to persist in learning despite the impressive increase of children's participation in primary education. This is in relation to the rural, poor, ethnic minorities, girls, nomadic population and disabled children (UNESCO, 1990 in Teshome, 1998).

It is obvious that we can find many disparities in most developing countries with regard to educational equity in gender , ethnic minority , disabled , nomadic population ,etc To overcome these problems, the use of educational broadcasting ,for example TV, brings greater equality of opportunities for all pupils (Bosch et.al in Teshome, 1998). This is to say that in underprivileged area pupils can participate in the same lessons and special events through TV (Tesfaye, 1990).

However, developing nations were agreed at the world conference on "Education for all". in the closing conference concluded that, the developing nations are must be utilized available means and technologies for communication and information to disseminate basic learning and to educate

the public at large (UNESCO, 1990; in Teshome, 1998). Several studies evidence showed that to realize the utilization of ICT in most of developing countries should applying educational broadcasting like TV in educational system. Because, one of the most importance of educational TV is for "Social equality in education ".That is , TV promotes the goal of social equality in education catering to the masses of rural background and those living in slums of urban areas by providing equal opportunities throughout the countries, because through it the best teacher is equally available forever students. Thus, TV brings the gap between the poor and the rich, the privileged and the underprivileged and the rural and the urban (koul, 1987 as cited Behera, 1995).

2.3.3 Promoting Educational Quality /Effectiveness/

ICT has considerable potential for improving the quality of education by increasing motivation, facilitating acquisition of basic skills, promoting inquiry, exploration and preparing individuals for technology driven world (Haddad and Drexler, 2002). In many countries the services of media for learning and teaching include the improvement of students' academic gain, patterns of promotion, wastage (drop out and repetition), attitudes towards schools as well as competence of teachers (Block et al in Teshome, 1998).

However, in developing countries many problems face students regarding achievement, dropout rate, qualified teachers, etc. But, technology displays a real potential to increase quality (effectiveness) of education through reducing dropout and repetition rate, increasing completion rate and compensating for input more than anything else The appropriate usage of ICT can promote the shift to a learner centered environment. ICT is include video ,TV, multimedia, and computer soft ware that combine text, sound and colorful moving images can be used to challenging and authentic content that will engage the students in the learning process (Tinio,2002).

ICTs diversify the systems of representation through the use of various types of stimuli (images, sound and movement) and address the needs of diverse types of learning (Visual, psychomotor, and affective (Haddad and Drexler, 2002). ICT can also help in the transmission of basic skills and concepts that are the foundations of higher order thinking skills. Creativity can be also facilitated by ICT through drill and practice (Tinio, 2002).

For enhancing teacher trainings as one of the reasons for employing ICT in education which in turn improves educational quality for example ICT has been used to improve access to and the quality of teacher training institutions like cyber teacher training center (CTTC) in south Korea where internet is used to provide better teacher professional development opportunities to train in service teachers. Moreover, in China large scale radio and TV based teacher education has for many years been conducted by the China Central Radio and TV University, the Shanghai Radio and TV University, and many other Radio and TV Universities in the country (Tinio, 2002). It has been indicated by many studies that technological tools enhance educational quality. Needless to mention there are more useful examples and detailed explanations where one can discover educational quality being improved due to the application of various media and technology.

2.3.4 Improving Educational Efficiency /Reduction of Cost/

Many developing countries utilize educational technologies for the reduction of cost that available for teaching learning process. Educational TV, utilized on a large scale, proves cost effective, and it disseminates education throughout the country at minimum cost without lowering the quality of instruction, (Koul, 1987 cited in Behera, 1995).

However there were no any resource constraints, most policy makers would choose good traditional schooling for all students than technology based instruction. They have noted that it is economically difficult to provide good quality schooling for all, since face to face instructions cost are very high. This initiates technology based instruction to be employed for educational purposes since their costs are lower than the face to face instruction (Teshome, 1998).The unit of cost of producing a video or writing in educational content was decrease as more students use the product. This implies that the more technologies used in education the lower the unit of cost (Haddad and Alexandra, 2002).

2.3.5 Other Benefits of Instructional TV

There are also other benefits gained through the implementation of ICT in education. It is beyond the scope of the current review to present exhaustively all the benefits described by various authors. However, it is essential to summarize some of the major additional benefits to those already presented. ICT serves as dual purposes, for the purpose of acculturation and for more

efficient instruction, for acculturation purpose, a student who is being prepared for a technologically oriented world needs to be immersed in technology environment earlier. Technology by itself is a new culture and requires early life adjustment to acquire all the skills. Thus, by employing the various ICT available, the school would be facing up to new facts of life that the students /learner would be functioning in technologically dependent society (Newaboku, 1997 in Ali, 2005). Regarding the second purpose , that is improving instructional efficiency, technology is about 'machines' and machines make most works easier and achieve more work in less time . Thus, better efficiency in the instructional system is gained by employing ICT. This efficiency is achieved through the following various ways:

- Expands the possible modalities of learning /redundancy
- Adds some measure of reality to learning /concreteness.
- Increases the perceptual scope of the leaner /immediacy
- Motivates the perceptual scope of the learner /immediacy
- Motivates the learner by making learning easier, more interesting and challenging
- Provides the teacher with more reflective time of improving instruction.
- Make record keeping and evaluation easier (Newaboku, 1997 in Ali 2005).

In general, productive learning systems and equal opportunities are ensured through the implementation of ICT in education. Modern technologies have created new information at an alarming rate and it is only through technology that this tremendous information can be harnessed or accessed in learning, (Newaboku, 1997 in Ali 2005).

2.4 Methods of Using Instructional Television

The term "instructional television" refers to the use of the television medium in any of its various technical forms to present information, ideas, and experiences in any subject area and at any level as some portion of any organized educational program. How can schools and other educational institutions employ satellite television for instructional purposes? What are the possible methods for application? Different educators put these assumptions as their own explanation. Their explanation it may be the same or different. For instance, educational television (ITV) can be used for instructional purposes in three basic ways:

1. Total TV Teaching: - TV is the only teacher in the classroom. In away, the program replaces the teacher. Such use of TV is seen in the education of students in very remote areas not covered by schools.
2. Television as a Complementary Basic Resource:- Television acts as a basis for the total teaching process. It complements other instruction media.
3. Television as Supplementary Environment: Television brings the latest information to a topic of classroom discussion and makes it interesting and lively by providing real life situation according to Sampath, et.al.(1984); Behera,(1995); Aggarwal, (1996) and Diamond, (1964).

Historically, studies of large scale application of instructional TV have shown that three major forms of utilization have been observed including instance where:

1. that total instruction programme is delivered via televised teacher.
2. there is an integration of teacher directed instruction with Television programme and
3. television is used to supplement teacher–centered instruction either for enrichment or remedial purpose (Reeves ,1998).

The uses of instructional television in an organized education program are varied but have described in the following categories: total teaching, supplementary, enrichment and remedial.

- If television is used for total teaching, all major contents and basic concepts are presented by television
- In supplementary use, television programs present materials carefully correlated with the principal course material but not otherwise ordinarily provided.
- For enrichment, television is used to present materials considered desirable in subject areas other than the principal course of study.
- In its remedial aspect, TV is used to present materials for makeup work or concentrated emphasis in narrow subject areas.

2.5 Learning Theories versus ICT in Education

The creation of effective educational technology program must emerge from the distillation of theoretical "principles" with practical "know-how". This means a theoretical principle first transformed before it can be applied. Its essence must be converted to fit the needs of a particular problem and there is no simple rule to describe how this conversion is done successfully (Luchins, 1970). However, instructional design is generally considered to be a systematic process that uses tenets of learning theories to plan and present instruction or instructional sequences (Burone et.al, in Jonassen, 1996).

Theories of learning involve diverse approaches to controlling the teaching – learning situation and some focus on the structure of the subject matter (e.g. gestalt); others focus on the classroom organization (Social-psychologists). The two learning theories that focus on learners have been the point of discussion since they are highly related to the central problem of the study, i.e. how student construct meaningful learning and experience by using ICT in education. For instance, behaviorists argue that mind can be "mapped" by the instructor. Nevertheless, constructivists (the result of cognitivists' psychology and interpretive philosophy) emphasis that learners can create their own interpretations of the world of information (Heinch, et al, 1996).

2.5.1 Behaviorists' Perspective

Behaviorism is in a paradoxical place in the idea and practice of educational technology in the teaching- learning process. It is a base for the innovation of the educational technology but unpopular in the current practices of educational technology (Jonassen, 1996).

The major assumptions of behaviorist's perspective are directly relevant to ICT in education. That is namely, the role of learner, the nature of learning, the generality of learning process and instructional procedures. Quite often, the learner is characterized as a passive entity that merely reacts to environmental stimuli; the nature of learning viewed as a function of building association between stimulus events (behavior) and the behavior itself (response events). Besides, learner characteristics, the needs and capabilities of individual learners are assessed to ensure that the content and procedure of an educational instruction is appropriate and meaningful (Burton et.al, 1996 cited in Jonasson 1996).

There is usually no great problem in providing the appropriate stimulus in ICT for education; it has ability to present to learner stimuli in the most effective manner possible. A problem arises when a developer develops appropriate techniques and its reinforcement. The developer of ICT in education should know exactly what response is desired (Jonassen et.al, 1996).

In fact, it is not only the response that should determine the strategies (techniques) of learning when one presents the stimuli (learned behavior) he /she should take into consideration the limitations of the media (technology) and the audience attribution, i.e. if a bullet is triggered properly, then it more likely to hit the target.

Behavioral tenets of an instructional design system to teach subject matter has the following tasks: First, the behavior desired must be analyses and standard of performance should be specified. The stimulus and desired response will determine what and how it is to be taught. Secondly, the characteristics of students are identified prior to instruction. Thirdly, students must be guided from one state of development to another using predetermined procedures and materials. Lastly, a provision of assessing the competence of the learner in relation to the predetermined performance criteria (objectives) must be developed The essence of the above ideas emphasizes on how the content is transferred in learning and it is indicate that the content is not flexible. (Gasser 1965 in Jonassen et al, 1996). The non- flexibility regardless of the factors mediating between stimulus and response of learning from or with ICT in education probably stems the limitation of behaviorist perspective now days. Generally, the basic assumption of behavioral theories of instruction is that human behavior is predictable. The designer assumes that if an instructional strategy made up of stimuli has a certain effect in the past, it will probably do so again.

Cognitive theory challenges the predictability of behavior summarized as follows:

- Behaviorist's theory is incomplete: there are often times at which we cannot prescribe or predict students' behavior.
- Individual difference makes it extremely difficult to predict learning outcomes: to choose effective strategies the designer should know more about the individual student who is difficult to handle.

- Students' ability to monitor their own progress as they learn and to change strategies when they realize they are not doing well (Gasser, 1965 in Jonassen et.al, 1996).

Recently, constructivism perspective emerged by combing cognitive psychology and interpretive philosophy.

2.5.2 Constructivists' Perspective

Instruction should be designed to support the dialogue between the child and his/her future, not a dialogue between the child and the adult's history. Adult wisdom does not provide a sufficient teleology for child development, (Griffin and Cole's, 1984 in Duffy and Cunningham, 1996).

Constructivists consider the engagement of students in meaningful experiences as the essence of learning. The ultimate measure of learning is, therefore, based on the ability of the student to use knowledge to facilitate thinking in real life (Heinich et. al, 1996).

Constructivists view problems (as a guide, as an integrator, as an example, as a vehicle, for process and as a stimulus) to determine what is to be learned and how learning occurs. Therefore, key procedures in designing problem based learning instruction are tasks analysis, problem generation, determination of learning sequence and facilitator role (Duffy and Cunningham, 1996).

Generally, behaviorists perceived a learner mind "mapped" by the instructor and mostly the selective process of the learner does not determine it. The constructivist suggested in their perspective that adult wisdom is not sufficient to learning since a learner can create their own interpretation of the world. They further argued that creating an environment (ICT for education) in designing for students to interpret social and physical phenomena could be a very demanding task but not impossible.

2.6 Critics on the Application of Instructional TV Transmission in Plasma

Many scholars have written related to critics on the application of TV as a medium of learning (instructional tools).The inferiority of TV as a medium of learning, but, they attribute this problem not to medium or technology itself but to the people who learn from it (Salmon and Leigh 1984).

The historical trends in technology and their influence on educational practice cannot be considered independently from advances in our understanding of how people learn (Schrader 2008). Decades of research have indicated that learning is a complex interaction among cognitive and non cognitive factors (Murphy and Alxander2002; Pintrich and schrauben, 1992 in Schrader 2008). For example, individual characteristics such as domain knowledge (Alexander, Jetton and kulikowitch 1995 in Schrader, 2008) and interest (Murphy and Alexander 2002 in Schrader, 2008) have been linked to learning. Additionally environmental characteristics, the nature of the learning context and environment have also been linked to learning (Lave and Wenger, 1991 and Gibson, 1986 in Schrader, 2008).

Learning is not simply enabled by using any array of technological tools, but as a result of the interaction within these environments (Schrader, 2008). From several studies the application of TV in classroom is supported and also disagreed. For instance, the advocated two- way communication model, the mass media TV, radio, books and publications, etc. on the communication process is the basic of the critique.

"The people have the right to impart and not only receive information. But, TV radio, publication, etc … are distortions of the natural communication of human beings" (Amare, 1996). The 'audience –centered' communication have been suggested as more effective than 'source-centered or message- centered'. The audience has been discovered as having more" power" in determining the effects communication will have on them. Moreover, the audiences (students) themselves affect their own perception of the requirements of the media with intern affects their own methods of learning are called audience determinants (Amare, 1998(a)). This researcher argues that, student predispositions to the requirements of TV method of learning affects how students learn from it.

For instance, in a study conducted in USA, students do not take TV as a serious educational medium of learning. They view it as a fun medium, even when it is transmitting a serious educational material. The result is less learning or shallow understanding from it. In this case, the researchers argued that it is not the technology that is inhibiting learning but rather the predisposition of the learners which acts as barrier to their own learning (Salmon and Leigh, 1984 in Amare, 1998 (a)).

In the teaching learning process" learner himself the key component, the previous knowledge and experience which the learner already possesses will either help or hinder his learning (Erickson, 1972). In addition social science model give attention on communication process for analysis of audience "to whom the message goes" or knowing to "whom" you are communicating involves consideration of the audience's size, age, sex, education and expectations.

On the application of TV in the teaching learning process it is importance to look at individual difference between students in the way they learn and react to media (Tesfaye, 1990). In order to produce an effective instructional TV video programme, the analysis of audience is one stage that considers for making plan for this program. The characteristics of the learner or audience...those who will be using the learning from material... cannot be separated from statement of objectives, one influences the other. Such audience characteristics as age, educational level, knowledge of the subject and attitude toward it etc..., and all have bearing on objectives and eventual treatment of the topic (Tenaw, 2006).

Some scholars based on the weakness of the application of TV in teaching and learning process, support elimination of TV from instructional process. TV is a communication medium that effortlessly transmits huge quantities of information within a short period of time.TV information is not available for conscious analysis understanding or learning. It is sleep teaching and therefore, it is educationally and socially harmful (Mander ,1978).TV method of learning is the antithesis of learning requires work ethic, due to theory of competition for attention, automation and reduced visual distance. Generally, students tend to invest less mental effort when learning from TV and as a result learning less since they perceive it as a fun medium (Amare,1998(a)).

2.7 Student Perception and Application of Plasma TV Instruction

Learning is evidenced by some kind of behavioral change resulting from meaningful experience or from effective communication (Erickson, and Crul, 1972). In a classroom that is responsive to various changes of student's interests and that encourages individualization of learning, you will surely require ready access to many different types of media of varying difficulty levels and dealing with a multiplicity of subjects (Brown, et al, 1985).The creative uses of a variety of media which may increase the learner's retention of what they learn and improve their performance and the skills which they are expected to develop (Tesfaye, 1990). Educational media are used in compiling and retraining students' attention (Heinch et. al, 1996). In particular

TV can employ a wide range of audio- visual materials, which appeals to different senses, perceptions, and which can be related to different aspects of the learning process (Hancock in Tesfaye, 1990).

However, the designers of instruction have to consider the students' role that the audiences of instruction are going to play during the transmission of instructional sessions (Blythe-lord, 1991). Otherwise, the perception, attitude and interest of students may affect the application of the transmission in the classroom. Sometimes the acceptances of new innovation appear to depend not only on the innovation itself but on many other factors, including the nature of the social system and the character of its members (Evans, 1967). Change and innovation in education requires that active participation of teachers, students, educators and all other concerned bodies. Not all innovations of course require full acceptance or complete rejection (Evans, 1967).

Educational innovations to be transformed in to actions, teachers and especially students have good perception toward these changes. People (teachers and students) within the same organization vary in their perceptions of new technology according to how it will affect what they do. So, new technology carries no imperative; what matters is how it is perceived (Heinich, 1996).

Perception is an interpretative process, which is based on previous percepts and experiential background.It influences thinking and attitudes formation and these inturn condition how individuals perceive (Sampath, K, 1984)

In order to consider students' perceptions (attitudes) to the applications (uses) of ICT first consider their back ground, maturity educational level, etc. (Chin .P, 2004).

2.8 Research and Experience in Ethiopia

Ethiopia is one of the countries which used educational broad casting as medium for delivery of education for long period of time. The application of this broad casting has been the purposes according to intended by designer, policy makers in general by government.

However, many studies have been conducted in our country based on educational broadcasting in different levels (e.g. senior essay, MA thesis and dissertation) and forms (articles, seminar papers and others) focusing mostly on television, radio and computers in general related to ICT in

education. I have been interested in this part to explore studies in the level of MA thesis, articles and seminar papers on TV method of teaching and learning.

The research conducted by EMA on 11 regions, 54 schools to evaluate the merit and demerit of the satellite television instruction and using the result for the improvement of the program, by using questionnaires , interview and observation as data gathering instruments. The study acknowledges the weakness and the strength of the plasma instruction. However, the study indicates the failure of the plasma instruction intrinsically and rationales given had been more of technical and power failure, speeding (pacing) of the program, attitude of teachers, background of students, etc. Moreover, the study encourages the plasma instruction in teaching- learning process. Because, the result of study show the plasma program will be best for future teaching learning process ((ትምህርት ሠገናኛ ዘዴዎች ድቪጅት, 2000).

A brief survey was conducted, on the title," Using Plasma TV Broadcasting in Ethiopian Secondary Schools" to investigate the contribution of the "plasma" mode of instruction to the school experiences of students. Government secondary schools in Ethiopia as viewed by students, their parents, and teachers; by comparing it with experiences in catholic secondary schools, which did not use "Plasma". Interviews, observations and document analysis have been used as data collection instruments. According to the researcher explanation both schools are based on the same curriculum but employ different classroom practices. Government schools were using a live nationally broad casted 'Plasma' TV mode of instruction whilst the catholic schools used traditional face to face methods of teaching. The study shows that the students' classroom activities and their school experiences in Government and catholic schools are quite different. Students in the Government schools are found spending the majority of their instructional time, listening to plasma transmission without making any live interaction. They are passive and dissatisfied with the current mode of instruction. The major factors associated with their dissatisfaction are highly level of English language skill assumed by the" plasma" teacher, the speed of the presentations which creates difficulties for conceptual understanding and the lack of class time for the students to discuss with the teachers and fellow students. On the other hand students in the catholic school are observed as more comfortable with their school's mode of instruction compare with students in the Government schools (Getnet, 2006).

MA thesis research entitled "teaching with and learning from electronic media": A case study on satellite TV instruction in Debre Berhan Secondary school. (Ali, 2005) mainly targeted the teaching learning process and the role of teachers and students during the satellite TV instruction-through purposeful sampling techniques; participant observation, in-depth interview and documentary evidence used as data gathering instrument. The conclusion of his study could be summarized in the following: plasma dominant classroom interaction: i.e. students and classroom teacher remain passive in most cases. And teaching as transmission: in the scenario, teaching was considered the transmission of information falls while learning was regarded as to receive it, the information 'falls' is not properly managed. Additionally, disaggregating of learning would be take place (i.e. bits and pieces of information were simply from the source to the audience (students). cooperative and collaborative learning experiences were not reflected in the research site and at the last the commercialization of Learning: If there is no immediate intervention then technological objectives will over ride educational objectives. Ali generally , summarize his study based on the new technological instruction say that, "As new technologies are implemented, it is important to be acutely aware of the social impact of learning as well as the impact of the vested interest in order to ensure the issue of quality in terms of content and its accessibility and methodology . Although the influence of IT on education is inevitable, it is necessary to ensure that the need and interests of learners, curricula and society at large are met through careful context analysis instead of running to homogenize what is actually heterogeneous" (Ali ,2005).

Another research was done by Brook (2006 (b)), entitled "Schooling in Ethiopia where the Surrogate Teachers take Over Control: Case of Eastern Ethiopia Secondary Schools." The study focused on the evaluation of school settings, administrative structures, reaction of students, teachers and school administrators, through school and classroom observation. From the school visiting, the researcher made conclusion as follows, teachers and students in public schools with surrogate teaching are growing reluctant to use their free time namely evenings and weekends, for tutorials, make-up classes and examination sessions. The teacher load becomes easier do not make any plan for teaching, do not preparing teaching aids or experiments and field activities. Since, students spend watching TV all day and are not engaged in any activity that makes teaching lively process.

Article, on the title, "Plasma TV Teachers when a Different Reality takes Over African Education", based on visiting of plasma in school. The study indicates the reflection of Ethiopian school settings and policy, focus on the role of new technology (plasma TV) and teacher in the classroom situation through visiting of the plasma TV in School. The study shows teaching in Ethiopian high schools using plasma TVs seriously scales down the involvement of teachers in curriculum development and implementation , their place in the community , and the ethical values they should represent and guide in their communities, without freedom from fear and retribution, without support and encouragement in all their implicit and explicit forms without building teachers' confidence in what they do in collaborative practices (Leonond and Leonard, 2003 in Brook Lemma, 2006). The researcher, further asserts from his vested TV lecture – centered is completely unidirectional, the students and the teacher was passive ;the teacher was no need prepared lesson plan, teaching aid and laboratory practices. In general, the explanation of his study, the television lesson have been completely removed the teacher from the science, students are confronted with the policy makers or curriculum designers at the ministry of education and no their immediate teachers. Even the teacher is not there; students operate the TV and attend their TV lessons (Brook Lemma, 2006(a)).

Amare (1996) explained in his article "Communication theories and instruction practices "limited effects perspective" that, audiences have "Powers" on recognition and communication process (in determining communication effects). Any incongruence (mismatch) between the communication message and audience pre-dispositions, wants and needs etc, has been found to result in the active functioning of the selective processes.

CHAPTER THREE: METHODOLOGY OF THE STUDY

3.1. Research Methodology

Knowing what you want to find out, leads to the question of how you will get that information (Silverman, 2000). This idea indicates that the required methodological framework to explore or investigate a phenomenon or a programme is of paramount importance in any research study. Methodology defines how one will go about studying a problem and the choice of the research approach which depends up on the question that are asked (Silverman, 2000). In this study qualitative approach employed for deep investigation of the application of plasma TV instruction, the perception of students, and the factors that affect their perception toward the application of plasma TV instruction in teaching learning process.

"The word qualitative implies an emphasis on the qualities of entities, processes and meanings that are not experimentally examined or measured in terms of quantity, amount, intensity or frequency"(Denzin and Lincoln, 2003 in Amare , 2004). The rationale behind using this approach is that the qualitative research provides more richness to the data and it is also concerned with subjective assessment of perception, opinion and behavior. The distinctive feature of qualitative research such as emergent, holistic and interpretiveness were reflected (Hammersley, 2002).

There are various forms of qualitative methods. These include Ethnography, biography, grounded theory, phenomology, discourse analysis, case study and so on (Denzin and Lincoln, 1994; Best and Kahun, 1989). In this study, I had selected the case study approach. Because, this approach helps to think more broadly and deeply about a research problem and enables to study the inner experience of people (students) as they react (Creswell, 2003). In studying of social institution like schools which require deep understanding, the researcher used qualitative method of study in general and multiple case study approach in particular. Multiple case studies are employed for study of multiple cases than of single case (Yin, 2003).So, I employed multiple case studies for examined two cases in the study that is the application of plasma TV and the perception of students toward PTV instruction. It is useful to present a complete description of phenomenon (problem) within context.

3.2. Research Design

Research design is a logical plan for getting from the initial set of question to be answered to set of conclusion, about this question (Yin, 2003).It has a major steps choice of appropriate instruments, collection of relevant data and analysis of the data. Hence, I have carried out this study in three stages. The first stage which was the preparatory stage involved proposal development, writing of related review literature, development of methods of data collection and strategies of data analysis. The second stage was the preliminary assessment, which was creating rapport with the EMA and School, employing techniques of data collection, data transcription, data categorization or analysis and interpretation. The third stage, draft report writing and finalization of the draft report were accomplished one after the other.

The researcher used multiple case designs which follow a replication, not a simple logic and the careful choice of the case (Yin, 2003).Multiple case design has a particular advantage in comparison to single case design in the evidence or data form. Because, case study research is highly data based and strives the same degree of reliability and validity as any good research (Anderson, 1990). Therefore, I used multiple holistic case designs for two cases that is the application of plasma TV and the perception of students toward it in teaching learning process.

3.3. Research Setting

The study was conducted in Wonji Secondary and Preparatory School. The school is found in Adama Woreda, East Shoa Administrative Zone, Oromia region. The Zone has around fourteen Woredas and three towns. The school is located at a distance of 112 Kilometers East of Addis Ababa. The School was established in 1980 and has been offering Preparatory program since 2001.

By now the school has both cycles (the first and 2^{nd} cycles of secondary levels) .The first cycle secondary level is from grade 9 to 10 and second cycle secondary level is grade 11 and 12 (preparatory classes) (TGE,1994). The school has 28 plasma TV sets with its accessories.

3.3.1. The Rationale for Selection of the Research Site

The research site was selected due to various reasons; since the researcher design is qualitative case study that required in depth understanding of human interaction through near native fluency in the language of the research participants and investigator (Gall, et al., 1996). Primarily, I emphasized on the above indicated research site which is found in Oromia region, and, Afan Oromo is vernacular language for me, so this help for me to collect depth information from most research participants. On the other hand, access to required data is one of the crucial stages of the research activity; I was made a preliminary site visiting for the possibility of getting data and how to get it from the school. At a time, the school was shown its willingness to provide the data for the study. Because, I was teach Chemistry subject for three years (2003-2006) at this school, so I had a special acquaintance to the majority of the school participants' .This was facilitated my entry and access to research setting and participants. Beside, my past experience in the school have been gave me an opportunity to sense the problem in point.

3.4. Source of Data

There were both primary and secondary sources in this research study. The primary sources were grade 9 and 12 students, teachers and directors of wonji Secondary and Preparatory School as well as staff members of EMA. The secondary sources were included file data (documents) and the wider literature.

For selection of the above source of data the rationale were mentioned as follows:

- The researcher believed that the selected teachers, EMA manager and expert have good experience on the issues
- The researcher believed that the selected grade 9 and 12 students have different experiences on the utilization of plasma TV instruction and characteristics.
- The researcher believed that the files helped to provide full information about the characteristics of teachers and students.

3.5. Sample and Sampling Techniques

The directors were selected purposefully both (directors of the high school and preparatory level) have much to do with management of the teaching –learning process in the school. Hence, I believed that they could provide me in depth information. In addition, one Educational Media manager and one chemistry expert from EMA were selected using purposeful sampling technique. Finally, I employed purposive sampling technique for the selection of 16 students based on their characteristics such as achievement level that is whose students have very high, very low and an average of medium achievement, residence that is students that comes from urban and rural area, grade level that is students of grade 9 and grade 12, because of both grade have different experience on the issue and sex difference that is Male and Female. Also I employed purposive sampling technique for the selection of 4 chemistry teachers (2 from grade 9 and 2 from grade 12), I select one female chemistry teacher that only found in the school to give equal chance for both sex of teachers. The remains three teachers were selected by the experience they have in teaching chemistry in the school.

Table 2: Number of respondents by sex:

Students		**EMA manager and expert**		**Directors**		**Teachers**		**Total**
M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	
8	**8**	**2**	**-**	**1**	**1**	**3**	**1**	**24**

The above table indicates that the total of 24 respondents of which 42% were females involved in this study.

Table 3: Number of respondents by age

Age	Students		EMA manager and expert		Directors		Teachers		Total		Total
	M	F	M	F	M	F	M	F	M	F	
Below 15	3	2	-	-	-	-	-	-	3	2	5
16-25	5	6	-	-	-	-		1	5	7	12
26-35	-	-	-	-	-	1	1	-	1	1	2
Above 35	-	-	2	-	1	-	2	-	5	-	5
Total	8	8	2	-	1	1	3	1	14	10	24

Table 3 above indicate that 5(21%) of the respondents were below the age of 15; 12 (50%) of them were found between the age of 16-25; 2(8%) and 5 (21%) of the respondents were found between the age of 26-35 and above 35 respectively.

Table 4: Service of respondents

Service year	Teachers	EMA Manager and Expert	Directors
1-5	1	-	-
6-10	1	-	-
11-15	-	-	-
16-20	-	-	-
Above 20	2	2	2

The above table shows that 6(75%) of the respondents had service year above 20; 1(12.5%) and 1(12.5%) of them found between the service years of 1-5 and 6-10 respectively.

3.6. Data Collection Instruments

The use of multiple method of data collection is useful for triangulation. The rationale for this strategy were that flaws of one method are often the strength of another and by combining methods, researchers can achieve the best of each, while overcoming the deficiencies of evidences (Merriam,1988). In conducting case studies, typically used sources of evidence include: documentation, file data, interviews, site visiting, direct observation, physical artifacts (Anderson, 1990). Accordingly, I conducted the study by employing in depth interview, site visiting, classroom observation, file data and focus group discussion.

- **File data**: is important as it includes the record of service, performance, staffing rosters, other lists of names and perhaps, internal reports and studies (Anderson, 1990). Accordingly, the researcher employed the records of performances for students to identify their academic achievement as high, low and medium achievers from both grade 9 and 12.In order to identify the students' characteristics such as grade level, residence and sex, the researcher used list of students name for both grade. In addition to this, the researcher used staff roster for identification of who was a grade 9 and 12 chemistry teachers.

- **In-Depth Interview:** In qualitative case studies, interview is the prime (major) source needed for understanding the phenomenon understudy (Merriam,1998).Owing to this ,the researcher were carried out with formal and informal interview with one EMA manager, one chemistry expert, two directors,4 chemistry teacher and 16 students within the three month. I used 50 minutes in average for interviewing of each participant. I believed that in-depth interview was important to obtain accurate information, more over it is flexible. Thus, in-depth interview was utilized person to person on one to one basis, because one to one interview was given for researcher opportunity to explore the participants' perception, thoughts and opinion on the application of plasma TV instruction.

For this purpose, I was prepared semi-structured questions (interview guides) that was derived carefully from the guiding questions, which in-turn were drawn from the main problem of the study see appendix, B_1, B_2, B_3, B_4. The data from interview was primarily conducted by

supporting tape recorded and video recorded in order to obtain accurate and detail information from the all participants. The qualitative research involves watching people in their own territory and interacting with them in their own language on their own terms (Gall, et, al, 1996).Therefore, the interviews were conducted by using Afan Oromo and Amharic language based on the preference of the participants. To sure the validity of the study, I prepared interview protocol for students, teachers and school principals to inform the interview confidentiality see appendix A.

- **Focus Group Discussion**: is used to collect qualitative information, and it is important because it opens dialogue among the participants and stimulates them to openly express their views on the issues raised by facilitator. It is helps to understand issue with consensus and variation among for validating statement and views, (Punch, 2000).

  Focus groups discussion is extremely useful in providing qualitative data which gives an insight into attitudes and perceptions that is difficult to obtain using other procedure .The researcher acts as a moderator and listener posing predetermined open- ended questions which the participants answered in any way they choose (Abiye, et al, 2009). By considering this fact, I applied focus group discussion with 16 students according to their characteristics such as, grade level educational level; residence and sex in order to understand further the perception of students toward the application of plasma transmission and its application see appendix D. Because I selected only these students on the discussion to give freedom for students to express their view, for gathering further information to create the dialogue between the two different grade level students and I didn't believe that those students gives their views only by employing interview.

  The discussion was made on Mar.30/10 at lunch time for 2:45hr, this time was the only favorable to get most of the selected students together in one area. The whole process of focus group discussion was supported by tape recorded and video recorded like the interview. The discussion was made by using Amharic language and Afan Oromo, which is facilitated by researcher translation. But, most of the participants knew both languages.

- **Observation:** - observation refers to the process of observing and recording events or situations. The technique is particularly useful for discovering how individuals or groups of people or

animals (and in some instances inanimate objects) behave, act or react (Abiye, et, al, 2009). It is a purposeful, systematic way of watching and listening to an interaction or phenomenon as it takes place (Creswell, 2003). In this word, I conducted observation as non participant observer in order to gain further information. I have undergone site visiting. Moreover, classroom observation was also used. In orders to carry out the classroom observation, I established a suitable relationship with students and successfully observe the classroom situations. During my stay in the class, detailed notation behaviors, events and context surrounding the events were observed. I have undertaken the observation of each section on Feb.15/10 and Mar.11/30 for 42'. The classroom observation undertaken during chemistry lessons by using rating scale and video recorded see Appendix C_1 and C_2.

3.7. Data Analysis and Interpretation

Qualitative data analysis is primarily an inductive process, with a content interplay between observed reality and theoretical conceptualization of that reality. The specific techniques of data analysis can vary from purely narrative descriptions of observations to quantitative descriptions of the frequency of certain behaviors or characteristics in the sample (Portney, 1993).

However, in this research, I utilized multiple case study analysis strategy to make a comprehensive analysis of the two cases that is the application of plasma TV and the perception of students toward PTV instruction. In case study the data were interpreted and analyzed as they are collected (Anderson, 1990). I analyzed the data which were gathered from research participants by applying interpretational analysis and categories analysis. The raw data were obtained through multiple sources of data that mentioned earlier, first transcribed through word by word and carefully read it; then the researcher developed categories of the transcribed data by using heading in to five theme. Moreover, the researcher utilized narrative descriptive interpretational analysis through experience, personal judgment or concept and reflection to assess the cases (that is perception of student toward plasma TV instruction and application of plasma TV on the sampled school) under study and to draw conclusion.

3.8. Standards of Quality and Verification and Ethical Consideration

The terms- standards and verifications are used in qualitative research to deconstruct the positivist terms, validity, objectivity and reliability (Amare, 2003 in Ali, 2005). In this line, the

general procedure, or strategies that the researcher followed in order to maintain standards, quality and verification in the study were triangulation and ethical principles.

- **Triangulation**

Using multiple data collection method, data sources and analysts help to check credibility of case study, and it is very important to raise the quality of the study. There are four basic types of triangulation:

1. **Data triangulation**: employing a variety of data source to collect information.
2. **Theory triangulation**: employing multiple perspectives to interpret a single set of data.
3. **Investigator triangulation**: is using several different researchers or evaluators to cross check the findings.
4. **Methodological triangulation**; is using of multiple method to study a single problem (Dezin and Lincoln, 1994).

In this study, the researcher applied data triangulation, by using a variety of data sources; such as human sources, data sources and observation notes. Utilization of these data sources was fundamental in verifying the convergence and divergence of the participants' perception on the case under study and helped the researcher to secure an in-depth understanding of the issues of perception of students toward application of plasma TV instruction and the application of plasma TV in teaching learning process.

- **Ethical consideration**

Ethics is a set of guide lines or human caution on the part of the researcher that guides the appropriate treatment of participants in the research (Best and Kahun, 2004).In a research activity involving human being as participants, the ethical rule to protect them should be considered. Likewise, the ethical issues were considered in this study in order to get the finding (Denzin and Lincolin, 1994). For instance, I stressed the ethical issues explaining that the interests of the research participants need to be taken in to account through informed consent, privacy, confidentiality and others. In more comprehensive manner, ethical issues in research activity

should arise from problem identification, specifying statements, purpose and research questions, data collection, analysis and interpretation, writing up the results (findings), (Creswell,2003). Accordingly, I employed the ethical principles in all of the process of the research, starting from proposing ethical values for her research and informed the participants before each interviews by using interview protocol (See appx. A).

- **Validity Strategies**

Validity in qualitative research design does not carry the same connotations as it does in quantitative research. In quantitative research, it stands for generalizability. But, it is used to suggest whether the findings are accurate from the stand points of the participants and the researcher's account in qualitative design (Creswell, 2003). The term validity is used here to represent the quality of the study conducted. Therefore, in this study attempt of spending prolonged time that is I stayed for three month in the field; using rich and thick description and consideration of ethical issues addressed. Due to the nature of the research design, the in-depth interview through semi structure interview guide conducted, observation made by using two cheek list for two sections and focus group discussion were made based on the general details of the setting and events seen, heard and read; thick descriptions were produced incorporating different perspectives since real life is made of opposite views that do not always come together.

CHAPTER FOUR: ANALYSIS AND INTERPRETATION

The main objective of this study as indicated earlier was to investigate the application and the perception of students toward plasma TV instruction based on their characteristics in Wonji Secondary and preparatory School. This chapter is devoted to reporting the data and my own interpretation.

My observation understanding

At the beginning, I was very enthusiastic to see how satellite TV was utilized in the classroom and how students perceive it. From my first day classroom observation, I understood that most of satellites TV were utilized properly in the class. But, after I started to collect data, the application of plasma TV becomes on and off. Even, I couldn't observe the classroom activity during chemistry lesson transmission as planned.

At first day (Feb.15/10), I started to identify how the application of plasma TV instruction was in classroom context by contacting with the preparatory level Director. I asked the permission to observe the class of chemistry lesson program. The director acquainted me with grade 12 Chemistry teacher; I went to the class during the 4th period at mooring shift. I was sitting at the back of the classroom and I started observing the daily lesson. The classroom teacher wrote the daily topic on black board and then he started opening of the transmission. But, there was no transmission at a time.

Following this, the teacher started to teach the topic based on plasma TV guide and text book. The students were beginning to follow the teacher, the classroom teacher presented the lesson by using "talk and chalk "method. The students were taking important notes from the blackboard and from the given lecture. They were attending the lecture by following their textbook. Whenever the students raised questions, the teacher gave explanations. I asked one student-1 sitting near me, which teacher would be more favorable for you in teaching chemistry lesson, classroom teacher or televised teacher? The student said that,

> *" For me the classroom teacher is not as much favorable in teaching chemistry lesson. I prefer the televised teacher to the classroom teacher"*
>
> *(Feb.15/10)*

From the above response, it could be understood that the student had positive perception for televised teacher. The time is over and then after the class, I asked the teacher-1 how he perceives the application of plasma TV in the classroom context? The teacher answered as the follows:

> *"The utilization of plasma TV has no continuity. For instance, today is the televised teacher program. Hence, I prepared myself by assuming the helper of plasma TV program. But, as you observed there is no transmission due to light problem. So, I tried to cover this period without preparation. But, I taught the learner from my experience"*
>
> *(Feb.15/2/10)*

I understand that from the teacher's idea and my observation, there is no proper utilization of plasma TV program in the school. Even, the plasma TV for teacher also changes teaching learning condition to challenges. Any teacher teaches properly when he/she prepares him/herself. However, the actual classroom teacher assumes that, the televised teacher was the main player in the class. But, he / she was only a supporter of the televised teacher. Hence, the classroom teacher had no preparation to teach during transmission period.

On the second day *(Mar.11/3/10)*, again I tried to observe the application of plasma TV in the classroom. I got the permission from the high school director and then he contacted me with a grade 9 Chemistry teacher. I was started attending the classroom activity, but the teacher did not use the plasma TV for teaching learning process. He started to teach by himself without plasma TV. The teacher was teaching just like the grade 12 chemistry teacher by using lecture method. The students were attending their learning attentively. I asked one student-2 sitting near me, which teacher would be more favorable for him? The student said that:

> *"Oh, my classroom teacher is better for me. I don't understand my televised teacher at al. Because, the English language of the televised teacher is beyond my ability to understand; thus, my classroom teacher is the best one for my learning process".*
>
> *(Mar.11/3/10)*

Unlike the grade 12 student, this student had negative perception for plasma TV lesson. At the end of the class, I asked the classroom teacher-2, on *(Mar.11/3/10)* why he did not use plasma TV for teaching learning process. He replied," I don't have plasma TV instruction. I become to teach 4 or 5 month without plasma TV, because, the transmission has no continuity. So, why

should I confuse myself?" From this, it is clear that some classroom teachers also had no good perception toward plasma TV instruction due to the application of plasma TV is on and off. Therefore, with the above introductory data, which I get from observation and my own reflection, let's see how the research participants understand the context in the ensuing section. I have discussed different issues in this section based on my observation and research participants' own understanding. All the names given in this research are pseudonym names.

4.1 Utilization (Application) of plasma TV in school context

Plasma TV is one of the most significant technology for the educational development and effective learning: expanding access, promoting efficiency, improving the quality of learning, enhances the quality of teaching and improving management system etc. (Haddad and Drexler, 2002). Based on this idea, one of my research participants, Desalegn, who is EMA Chemistry subject expert, said:

> *First of all, the starting of satellite TV program has its own aim that is by help of Technology, it was intended to improve three things, namely: quality, equity and accessibility, to minimize the gap between students that found in urban and rural areas throughout the country.*
>
> (Apr.22/10)

The above idea indicates that, using educational technology plays a great role to enhance further education and development by supporting of educational system and reforming curricula. Other research participant, preparatory school director, Awol said:

> *At this time ICT is one of the six packages developed by Ethiopian government, to enhance teaching and learning process. The program is delivered from one center and it is also standardized. So, I believe that plasma TV transmission helps the classroom teachers in teaching and learning process.*
>
> (Feb. 17/10)

But the utilization of telecommunication media needs basic understanding of the status of the present schooling situation especially facilities (Wood and Wylies, 1974). The implementation of plasma TV application in the school is quite different from the intended one. When I observe the application of plasma TV in each class, most of the time large numbers of plasma TV were out of utilization due to several causes, like technical problems. This might be creating obstacle for

students to attend their learning effectively and also its antithesis of the principles of learning from technology which mentioned above. Even, for teacher also creates a problem to address their responsibility on their work. Because, most of teachers depending on the plasma TV lesson. If the plasma TV transmission is present, he/she teaches the students, otherwise the teachers might not cover the lesson. Thus, the plasma TV situation disturbed the classroom teachers' program and student concentration. For instance, the interviewee, Mebrate, grade 12 student in said;

> *We did not learn through plasma TV continuously. Because, sometimes the plasma TV itself is out of utilization and have light problem. In this case the lesson/portion of the day is missed, because the classroom teachers themselves do not teach that portion. When I think about plasma TV, it creates a great problem on the classroom teachers.*
>
> (Mar.10/10)

From the above student idea, I observed that students have problem to attend his/her learning continuously. Because, the interruption of plasma program. The teacher him/her self is does not try to solve the students' problem. Regarding this, other research participant Alemu, a grade 12 chemistry teacher, reported:

> *There is technical problem in our school concerning the utilization of TV transmission. The major problem is the fact that many teachers did not take training on the application of plasma TV. Because of this, the teachers did not manage the problem. Besides this, there is the problem of program overlap and light problems. In general, the lack of trained man power and the interruption of plasma TV program application aggravated the problem in the school.*
>
> (Feb.23/10)

The above problems related to Utilization of plasma TV transmission in the school were exacerbating due to the lack of trained man power. When the program is turn off in case of several factors, the transmission of plasma lesson is also not present in the class. So, the students do not get the lesson. Even, the classroom teacher does not re-teach the lesson once the transmission was turn off. This might create an obstacle in teaching-learning process. Another research participant, Shega, a high school director, stated the following:

At this time, the school does not have media experts. Three or four years ago, the school is known as a one high school and there were two media experts. But today the school is divided into three; preparatory, technical and high school. From that trained persons, one left to the school and the other one joined technical school .At present, the high school has no trained man power in media.

(Feb.17/10)

From the above response, I understand that, there is lack of trained man power on the utilization of plasma TV in the school. When the problem is created on the utilization of plasma TV instruction, no one overcomes the problem immediately. So, the utilization of plasma TV is full of obstacles in the teaching-learning process. Based on this idea, one of my research participants Ayele, a grade 9 chemistry teacher said:

There is no training that I get from the concerning bodies with related to the utilization of plasma TV .Even, when I come to this school for the first time ,I get remote control only from the school principal and then start to teach my subject.

(Feb.18/10)

According to the above reflection of the teacher, there was no training that was given by concerned bodies related to the utilization of plasma TV for instructional purpose. So, the teacher couldn't easily manage when the problem occurs during plasma TV instruction .For instance, as the above teacher expressed it, even no one told to him how the remote control is used for the proper utilization of plasma TV. Moreover, Shega, high school director told me about the above idea as follows:

When the new teacher comes to the school, we give him/her only teachers' guide and remote control, then after the teachers themselves adapt the utilization of plasma TV through experience. But, most of the time, the students know technical system of the plasma application more than the teacher. Because of this, students were searching another programs as well as the spare part of plasma TV. When the students are not interested to plasma lesson they change channel before the teacher was entering to the class. That means, there also disciplinary problems that affect the utilization of plasma.

(Feb.17/10)

From the above view of the respondent, I understand that, the actual classroom teachers lack of the necessary skills to utilize the plasma TV for teaching- learning purpose. But, students have knowledge on the utilization of plasma TV than that of the teachers. Of course from the teacher's and the director's ideas, we can understand that any concerning bodies are not supervise the way of utilization of Plasma TV transmission in the teaching learning process. So, this brings that the question like how plasma TV utilized effectively in each school. Concerning this idea other research participant, Beshadu, chemistry teacher said:

> *Sometimes, I think and say to me, does this Plasma TV have owner? Because in this year, in first the semester Plasma TV was utilized only for one month. The concerning bodies don't give attention for utilization of Plasma TV. Once they received the plasma from Ministry of Education and installed in the school then ignore it.*
>
> (Feb.18/10)

The above teacher's idea indicates that, attentive supervision is required for removal of any challenges that observed related to the application of plasma TV in the teaching learning process. So, concerning body must be following that the way (form) of application of plasma TV in the school context, to make effective utilization. Actually when plasma TV is introduced to each school, every concerned body takes responsibility to follow the utilization of plasma TV as their level. But the above ideas show that, most of them do not supervise the way how to utilize the Plasma TV in the school. With regard to this idea, other participant, Daniel, EMA manager, said:

> *About the utilization of Plasma TV transmission, from each school by taking two people, we give training based on the title of "utilization, application and simple maintenance of plasma TV .But, the problem was happen with turn-over of the trained man power from the school and also our supervisors have a problem that not supervises the application of plasma TV in the school.*
>
> (Apr.29/10)

According to the EMA manager, every school has two media experts. These experts take training about application of Plasma TV .But, the problem is many of plasma TV experts leave the schools. However, the supervisor and other concerning bodies have responsibility on the utilization of plasma TV in teaching learning process. In general, form my observation and my research participants view, the utilization of plasma TV in the school context have problem. Also

the concerned bodies as such not give follow up on the plasma TV utilization. The consequence of the above problem might be affecting the perception of students toward learning through plasma TV.

4.2 The Role of Plasma TV in Teaching Learning Process

Different ICT applications have potential to contribute to different aspects of educational development and effective learning: expanding access, promoting efficiency, improving the quality of learning, enhancing the quality of teaching and improving management system (Haddad and Drexler, 2002). The use of the PTV instruction in the school situation has three main roles. That is, plasma TV covers the portion of subjects, present standard education by standardized teacher equally all over the country and demonstrates standard laboratory work.

4.2.1 Content Coverage

Plasma TV is suitable to cover content (portion) of the text book within the academic year. But, this is difficult for classroom teachers when textbook is very broad. Concerning this, the researcher interviewed, Merga, a student of grade 12, who responded as follows:

> *The role of plasma TV is to cover the portion in the given periods. However, when we learn by actual classroom teachers, some teachers teach with low speed in teaching learning process. Thus, most of the time at the end of the semester, there is overlapping of tutorial class to finish the subject contents. But, at present, this problem is not observed due to plasma TV.*
>
> (Mar.10/10)

The researcher tried to find out whether teachers may explain it differently and she interviewed, Beshadu, a grade 12 chemistry teacher. She responded as follows:

> *The role of plasma TV is to cover large portion of text book. For example, in our subject (chemistry) there are several units in the text book, that is seven or eight units' .So, it is very bulky and difficult to finish the subject in academic year for teacher as human manner. But plasma TV covers all units in a given academic year, because, it is already adjusted by time.*
>
> (Feb.18/10)

From the above response of the two respondents, it is clear that, both the student and teacher represented the same view that plasma TV is useful for covering the contents of the subject matter within the given academic year. With regard this, Beshadu, added some points that is even though the actual classroom teacher might not cover the given portion within academic year his/her teaching was unusually based on the student interest and understanding. But, the plasma TV is covering many pages within thirty minutes without understanding of most the students'. The intent of plasma TV was to transmit the lesson in prescribed manner. The very nature of plasma did not allow the televised teacher to see, listen to and understand students and their learning difficulties (Barker and Patrick, 1988 in Ali 2005).

Several educators agreed that teaching and covering of portion are quite different or to cover the content and to help students in learning are different issues. To cover content is easier while, to help students learn something is more challenging. Rushing to cover contents can be as simple as putting on the plasma TV just to display the material to the audience. However, sending message cannot be the guarantee for the message to be understood by the group since they have their own will of power to accept or reject any idea (Amare, 1998(a)). This indicates that, students have their own affective- filter to enable any input to strike deeper, because, the perception of students affect their learning through plasma TV instruction.

4.2.2. Standard Education, Qualified Teachers and Equality in Education

The most significant function of educational TV is for "social equality in education"; that is plasma TV promotes the goal of "social equality in education" catering to the mass of rural background and those living in slums of urban areas by providing equal opportunities throughout the country . Because, through it's the best teacher is available equally everywhere for students. (Koul,1987 as cited Behera,1995). As my research participants mentioned, Plasma TV creates equality between urban and rural students. At this time, large numbers of schools are found in rural area and these areas have got a chance of plasma TV instruction for teaching-learning process. Concerning this, Daniel EMA manger reported:

> *During installation of plasma TV, we were given priority for rural school. Because, most of the time, students from the rural areas were disadvantaged, when compared to those from urban ones in relation learning process. But, in*

our country most of the students found in rural area .Hence, the expansion of plasma TV national wide has created equality of educational opportunities'

(Apr. 29/10)

From the above ideas we can understand that, there is equalization of urban and rural area on the utilization of plasma TV or ICT. This may be at some extent minimize the gap between urban and rural students. Because, the rural area students have get the chance to learn through well qualified televised teacher as the same to that of urban one. One of my researches participants Gizachew, a grade 9 chemistry teacher, further expressed the situation as follows:

Plasma TV equally transmits the same education for all school at the same time. Even, plasma TV instruction helps the school when it lacks well qualified teachers. Generally, the Plasma TV lesson has several better things than that of actual classroom teaching. It brings the world in the class room.

(Feb.23/10)

From the above idea, plasma TV lesson have better things than that of actual classroom presentation. Hence, when the plasma TV lesson found in all over the country, all students attend their education through it, so this condition create equality for all students that found in the country by minimizing disparity between urban and rural area students . The real context of our country shows that most schools have problems like lack of well qualified teacher and standard laboratory room. In support of this idea, Daniel, EMA manager, asserted the following:

At one time I went to Somali Regional State to observe the plasma TV utilization. I meet with parents, teachers and students. During discussion time, the parents said that, our children have got the same teacher as that of students in Addis Ababa. Before the introduction of plasma TV, the government sends teachers to other region .Those teacher usually stayed 2 or 3 months with our students. Then those teachers leave the school. This condition creates an obstacle in teaching learning process. Even, it is a major problem to get permanent teacher. However, today we get a permanent teacher or Plasma TV teacher that live together with our students.

(Apr.29/10)

As we understand from the above reflection there was a problem of equality between urban and rural area students to got qualified teacher in teaching learning processes. However, at present, due to, plasma TV instruction, at some extent all students could attend their learning through it. Therefore, plasma TV creates equality between students that found all over the country.

4.2.3 Demonstration of Standard Laboratory work

All of my research participants' views reflect that, the main use of Plasma TV instruction is for demonstration of standard laboratory activities at high school level and preparatory level). Because, there is no any laboratory in the school, students learn laboratory activity from delivery of satellite TV. According to the school research participant views, this is "better other than nothing". The research participant, Beshadu, grade 12 chemistry teacher pointed out the following:

> *According to my opinion, the use of plasma TV is highly observed in promoting demonstration of laboratory activities in natural Sciences .This application is more supportable since, many school lacked laboratory room and equipment. But, if the school has adequate laboratory class and equipment students learn better than in case of plasmatic demonstration of laboratory activities.*
>
> (Feb.18/10)

According to the above research participant response indicate that, natural science subjects have more of practical nature. So, this subject required laboratory activities and it is not suitable to teach theoretically. However, plasma TV instruction is illustrated different laboratory activity. In this case student get knowledge from satellite TV screen about laboratory experiment. But when student practice this experiment as the context of school situation, they more develop their practical knowledge on experimental science. Other participant, Gameda, a student from grade 9, response in the interview state that:

> *The use that I get from plasma is observing several science activities for natural science subjects like chemistry, biology etc. The natures of these subjects are more experimental not suitable to teach theoretical .Even, the leaner themselves not as such memorized laboratory activities from what they read and listen. But, they can easily remember the activities when they*

practically do them. However, if the student does not get the chance to practice the activity, watching through plasma TV screen is more preferable than listening and reading. So, plasma TV more helps for me to remember the activity done through it.

(Mar.11/10)

The reflection of student idea somewhat the same to the former respondent (teacher) view that discussed above. But he mentioned additional idea that is plasma TV helps the learner simply to memorize about laboratory activity that watch from plasma TV screen. In addition the above explanation, Alemu, grade 12 chemistry teacher said:

One of the advantages of plasma TV in my subject (chemistry) is the fact that it is helpful to show the demonstration of real and several laboratory experiments by applying different expensive materials and chemicals that could not be found in many school of this country .and also it teach a complex portion simply by using animation and different models.

(Feb.23/10)

The above teacher idea indicates that, plasma TV has advantage to demonstrate real and several laboratory experiments, means it can bring the world in the classroom and also helps to teach a complex portion by using animation and models. Therefore, the plasma TV lesson is more powerful. Hence, it stimulates the learner in teaching learning process. In fact plasma TV learning stimulates the learner, because of its used color image, movies etc for presentation of the lesson. A problem raises the engagement of students in meaningful experience as the essence of learning. The ultimate measure of learning is, therefore, based on the ability of the students to use knowledge to facilitate thinking in real life (Heinich et al 1996). The students are engage knowledge from learning through plasma TV if and only if the student must understand the transmitted lesson as their ability. However, from the participants' idea, students have several problems to construct meaningful knowledge from plasma TV lesson, such as language problem, the speed of transmission and so on. The plasma TV lesson is not manageable as the students' ability. Therefore, plasma TV lesson make the students' passive listener in teaching learning process. For instance, Alemu, grade 12 chemistry teachers expresses this idea as follow:

Students have language problem and could not cope up with the speed of the transmitted lesson, they could not have even time to ask questions; But, if we solve this problem, Plasma TV would be more advantageous for teaching learning process.

(Feb.23/10)

From the above ideas, I understand the role of plasma TV helps the learner to construct meaningful knowledge in proper manner. However, the respondents reflect that those students have many problems to attend the plasma TV lesson. So, to realize the role of plasma TV in construction of knowledge of students we have to solve the problem encountered the students.

4.3. Activity of Students versus Plasma TV on Science Education

Television is particularly considered good medium for demonstration than a face – to – face situation, since the camera can look down a microscope , peer in to corners and give close ups of things, which could never be so closely or accurately observed in a normal classroom situation (Clark, 1968) . In relation to this, Desalegn, EMA chemistry expert said:

Plasma TV has potential to bring the world in to the classroom. Today, there are more than 1000 Secondary Schools in Ethiopia But, these schools might lack laboratory or they are unable to use laboratory room for experimental activity So, the students lose the chance to practice the laboratory activity. However, plasma TV minimized this problem to some extent. Because the learner observed the activity at least through plasma TV screen.

(Apr. 22/10)

From the above response, we can understand that plasma TV instruction minimized the problem that exist on teaching science subjects through laboratory activity , by demonstrating color and peaceful ways . So, students have more than one sense organ to understand the laboratory activity transmitted though plasma TV. But, at some extent plasma TV make meaningful learning for students. However, science subjects are more practical subject in nature, especially chemistry deals about matter that is the properties, structure and composition of substance. For making meaningful learning for learners around this subject, the learner uses at least three sense organs that are eye, ear and hand. During my observation the school has no laboratory class for the last five years. But at present situation the room gradually turned in to store. The school receives

neither supplies nor equipment to update the laboratory and revitalize their use to support the teaching learning activities (student practice or teacher demonstration). On this idea most of my research participants especially teachers and students are reflecting their feeling. For example Shalo a student from grade 9 express her idea in the interview as follows:

> *We don't have a chance in this school to practice the laboratory activities. That is demonstrated through plasma TV screen because the school doesn't have laboratory room. So our chance is only watching the televised teachers' activity through the screen.*
>
> (Mar.11/10)

From the above idea reflection, students do not get a chance to practice the laboratory activity in the school because of the lack of laboratory classroom. But, students were observing the laboratory activity through plasma TV. This condition might make the students passive on laboratory activity. So the students are not developing their ability on practical areas. In this case, the views of my research participants indicate that plasma TV instruction more selectable on teaching chemistry subject. For instance, Wondu, a student from grade 12 he reflect his interest during the interview time as below:

> *I prefer the plasma TV teacher than actual class room teacher. Because, some schools, like our school does not have laboratory room. But, when we learn through plasma TV, at least, we can observe different practical activities on science subjects.*
>
> (Mar.6/10)

Of course, according to the above ideas of student, students have interest for televised teachers on laboratory activity demonstration. Because plasma TV is demonstrate laboratory activity through screen, but the school does not have laboratory room so student has positive perception for plasma TV. Thus, in this case plasma TV is better than nothing. Therefore, the school is not suitable to develop the student practical ability. But the students develop their knowledge regarding to practical activity on science subjects in the form of transmission of facts by observing from plasma TV screen. Generally from the above ideas, students do not have a chance to develop their practical knowledge around science subject activity. This might be students become passive on the principle of "learning by doing".

4.4 Time Allotted for Televised Teacher and Classroom Teacher

Following the use of satellite TV instruction the school program has 42 minutes to present the lesson for one period. The televised teacher uses 30 minutes for transmission of one lesson while classroom teacher allotted to use 12 minutes only. Within this short time, the classroom teachers were expected to revise the previous lesson, introduce the daily lesson and revise the lesson presented through the transmission. There was no time allotted for classroom teachers, even to walk form classroom to class room or from one block to another block. It was not uncommon to see the class room teacher running to enter the class in order to not miss the time otherwise; they would miss some parts of the transmission until they open the plasma TV. In relation to this, Beshadu a grade 12 chemistry teacher said;

> *The time allotted for classroom teacher is very short, that is 12 minutes. Within this time we cannot revise the entire lesson presented by plasma TV teacher. But we can revise the core point high light without chalk. Because, sometimes the plasma TV teachers are covered large portion by one lesson; for classroom teacher it may take 3 or 4 periods .Even, when classroom teacher enters the next period in other classroom, the televised teacher already started the lesson. Thus, it is difficult for the classroom teacher and I wish the reverse of this program time arrangement.*
>
> *(Feb.18/10)*

The above teacher idea reflects that, the actual classroom teacher not have enough time to address their responsibility on the classroom activity. For instance, the actual classroom teacher cannot revise properly the lesson that raise by plasma TV teacher, because the televised teacher present broad portion in one period. Since the above teacher complain on the time allotted for teaching-learning purpose. Because 12 minute is limited for classroom teachers role that play in teaching learning process .But the plasma TV teacher cover large minute for the classroom instruction. Thus, the classroom teachers become passive in teaching learning process. Regarding this, Ayele, a grade 9 chemistry teacher said:

> *The time allotted to teachers is very small and they cannot redefine or summarize several points that were mentioned by plasma teacher with high speed. Also the teacher cannot finish exercise that rose by plasma TV teacher and cannot answer the questions raised from classroom students. So, as to my opinion the class room teacher has become totally passive in every classroom activity.*
>
> (Feb.18/10)

Most of my research participants express their feeling on the time allotted for classroom teachers. For instance, Tamirat, a grade 12 student said that:

> *The time allotted for classroom teacher is not adequate in addition, the plasma TV instruction is fast and we have a language problem to attend the lesson transmitted attentively. Even, the classroom teacher cannot help students on this problem, because, the teacher cannot summarize the points that are raised by the plasma TV teacher within a 12 minute. So, I suggest that 20 minutes would be allotted for the classroom teachers*
>
> (Mar.7/10)

The above teacher's and student's views indicate that the time allotted (12 minute) for the actual classroom teacher is not adequate. Especially according to the above student's, students have language problem to understand the activities that given by televised teacher. Hence, those students need more time to contact the actual classroom teacher. As he said that, the actual classroom teacher understands the problem of the learner. In this case he reflects his wish the classroom teacher time more than 12 minute. In addition to the above reflection one of the EMA (chemistry) expert, Desalegn, reported that the future aim on the time allotment of plasma TV instruction as follows:

> *In our country classroom teacher has role in televised teaching learning process. But, the problem is the time allotted for classroom teacher. However, now this problem will be alleviated, that is the actual classroom teacher time become 25 minutes.*
>
> (Apr.22/10)

Generally the actual classroom teacher need more time to summarize as well as to answer questions raised by students on the lesson presented by the televised teacher.

4.5 Perception of Students and Plasma TV Instruction

Plasma TV employs a wide range of audio- visual material, which appeal to different senses, perceptions and which can be related to different aspects of the learning process (Tesfaye, 1990). However, not only technology inhibiting learning, but rather the predisposition of the learners is can act as barrier to their own learning (Salamon and light 1984 in Amare, 1998 (a)).That means the perception of students affect their learning process. The audience (students) themselves affect their own perception of the requirements of the media with intern affect their own methods of learning (Amare, 1998(a)). The perceptions of students affect the application of plasma TV in

teaching- learning process. I agree with the idea of audience determinants that the introduction of suitable technology (plasma TV) alone does not bring the change on the students learning it. Of course, the introduction of plasma TV in secondary school was to address the intended mission. This requires positive perception on the part of mainly students. We can estimate the perception of students from the ideas of participants. Depending on the participants' idea, the perception of students divided into two that is negative and positive perception. Even if, we know how students hold these different perceptions due to several factors that mentioned by participants. For instance, the students have good perception, because plasma TV teachers are more qualified and are able to work effectively in the time allotted for them. In contradiction to this, students develop negative perception due to problem of language and the rapid pace of delivery way.

Actually, when one examines further, the perception of students is related to different factors. For instance, in my research setting, language problem is one of the main factors for students to develop negative perception on plasma TV lesson. The subject the delivered by satellite TV were used only English language. In this case, the majority of the students cannot follow and understand the lessons broadcasting through the plasma TV. Because most of students have weak back ground on English language, even if they started learning English subject from lower grade. The consequence of the negative perception of the student was expressed by shega, high school director as follows:

> *Students prefer the classroom teacher for their teaching and learning purpose. Because the classroom teacher teaches in accordance with students' ability and transcribed the lesson as the students' wants .For this reason, some time students disconnect the plasma TV.*
>
> (Feb.17/10)

In addition to the director's reflection other participants express their feeling on this situation. For example, Merga, a grade 12 student in the interview as he said:

> *At Elementary level we learn by first language. When we come to high school the teaching learning process takes place by English language. But, we don't have adequate English language skills. So, attending the lesson that is delivered through plasma TV was very difficult to us. Even taking down notes from plasma TV lesson required the skill of English language, especially the writing and listening skills. Due to this, I prefer the classroom teacher to the televised teacher.*
>
> (Mar. 10/10)

Both participants explain that, students have negative perception on the application of plasma TV due to lack of experience on using English language at elementary level. The consequence of this, the plasma TV lesson were become complex for the students. Actually, I understand from the views of both participant mentioned above. Most of the students developed negative perception in the plasma .Since the plasma TV pace was not compatible with their learning ability. Unlike the televised teachers, the classroom teachers could present the lesson in a human manner. The classroom teachers manage the pace of their presentation in accordance with the learners' ability. The teachers could also ask the students, check their class work and revise problem areas. If any, teachers could understand the students problems, even by simple eye-contact based on their facial expressions. The students could also share their views with their teachers as well as with their own peers and they could also take down notes clearly with confidence, since the notes were written on the black board, it is stable until all students complete the notes. However, this was hardly possible during the plasma TV due to its transmission and unstable nature (Kozma 1996 in Ali, 2005). The problems illustrated in the above were repeated by other research participants. For instance, Wobayehu, a grade 9 student expresses her view regarding with the disadvantage /limitation of PTV instruction during focus group discussion as follows:

> *The limitation of plasma TV lesson is related to language problem. We learn up to grade 8, by using our first language. When we become to grade 9, English language is difficult for us. Even the televised teacher used perfect English language, this language might be conducive only for top learners. But for students like me it is not compatible. In addition to this problem the televised teachers teaches with high speed. So, the plasma TV lesson is difficult for me and I prefer classroom teacher than televised teacher.*
>
> (Mar.7/10)

Besides to the language problem, the speed of the plasma TV transmission was another major factor mentioned by most of my research participants', For instance, Alem, a grade 9 student, in the interview indicates that:

> *The problem of plasma TV lesson was the speed of the transmission and the language. These two problems are related. We learn by using mother tongue before this level. So, we have not experience on English language as much. Thus we have weak English language skill and did not cop up with the speed of PT V teacher.*
>
> (Mar. 16/10)

The speed of the plasma TV transmission enhances the negative perception of students for plasma TV. As the above participant's idea, the transmission was very fast, not manageable by students' ability and the instructional time ends without understanding the subject matter. Even, the transmission is not repeatable or rewindable for students. Moreover, Wondu, a grade 12 student, one of the participants reflected his view in focus group discussion regarding with the speed of the plasma TV lesson by comparing himself with other students as follows:

> *By the way, plasma TV lesson for me, it is good in all direction. However, for the student somewhat not active on their learning, the speed of the plasma TV not concerns them. Students that are very active monopolized the teaching learning process compared to the remaining one. Hence, the Plasma TV transmission has this weak side in teaching learning process.*
>
> (Mar.30/10)

When we look the above response in-depth, language problem and the speed of plasma TV transmission caused students to hold negative perception on plasma TV. On the other hand, other research participants reflect that some students have positive perception on plasma TV lesson. Because, the speed of plasma TV lesson more focused on those students (active students). Even, for those students the plasma TV instruction is better than that of classroom teacher. For instance, Dawiti, a grade 12 student express her feeling in the interview as follows:

> *For me the transmission of plasma TV create better opportunity to develop my listening and writing skills and I have got experience on how to learn from technology. Learning from plasma TV itself is an example for modernization, because we are becoming a member of globalized world.*
>
> (Mar.19/10)

Regarding the above ideas, the perception of students is related to several factors. These factors have different meaning for the learner. These differences might be depending on individual difference that exists between the students. For instance, the interviewee, Alem, a grade 9 student, said that:

> *The limitation of plasma TV is that it does not give attention to low achievers, even though it seems good for high and medium achievers.*
>
> (Mar.16/10)

From the above idea it is clear that , the plasma TV transmission does not addressed the individual difference that existed between students in teaching learning process on the application of plasma TV .But ,it is important to identify individual difference that exist between students in the way they learn and react to media (Tesfaye,1990). The individual difference that existed between the students might be depending on their characteristics. Such as; sex, grade level, achievement level and residence. Thus , this study was based on the perceptions of students towards plasma TV and it was carried out by considering the students characteristic such as sex, grade level achievement level and residence. Hence, the relationship between characteristics and perception of students on the application of plasma TV transmission expressed as follows.

4.5.1 Achievement Level

The perception of students toward learning through PTV was investigated a function of achievement level .We can classify students based on their achievement that is high achievers, low achievers and medium achievers. The researcher reflects the views of all participants to know, what does the perception of the students toward plasma TV. From the participants responses' the perception of students toward PTV instruction was different with each other. I identify those students were selected based on their academic performance that is, high achievers, medium achievers, and low achievers. Accordingly, one of the interviewee Biruk, who was identified as low achieve, from grade 9 students said the following concerning the plasma TV:

> *I don't like learning with plasma TV .But I attend the plasma TV lesson only because I do not have any other option .I cannot ask a plasma teacher on the topic that is not clear for me. Generally, plasma TV lesson is not good for me.*
>
> (Mar.19/10)

The above idea of the student indicates that, he has a negative perception on Plasma TV lesson and he wants more clarification during the presentation of televised teacher. In contrast to the views of the low achiever, students who are high achievers have positive perception about plasma TV. This was clear from the interview response of Aberham, who was a high achiever student from grade 9 said that:

I like plasma TV lesson. Because, it gives so many advantages for me, for example plasma TV lesson helps to develop my English languages skills more than the actual classroom teacher.

(Mar.23/10)

This student was interested about the televised teacher and he believed that the televised teacher helps him to develop his language skills. Thus, this student has positive perception for plasma TV instruction. The interview conducted with the teacher also indicated with low achievers had negative perception and high achievers had positive perception about the use of plasma TV for instruction. This was clear, when Beshadu sated:

Most of the students that are found in this school are low achievers and do not have good perception for plasma TV lesson. But, the high achievers have good perception about plasma TV. Even if the teacher is not present in the class, these students open the plasma TV and learn with it. High achievers are doing well on their learning and have good perception for plasma TV instruction as well.

(Feb.18/10)

The refection of the above mentioned views indicate that, higher achiever students learn with plasma TV, even if the classroom teacher is absent. This implies that, high achievers have more interest for learning through plasma TV than low achievers. On the other hand, low achievers have not good perception for plasma TV transmission. Although, most of the time, student reflect their interest based on learning through plasma TV. On the other hand, in contrast to above two students' ideas, Saba, a grade 12 student who was identified as a medium achiever reflect her during interview view as follows:

I like learning through plasma TV partially but I am more interested, when the classroom teacher gives clarification based on televised teacher's presentation, because the plasma TV teachers is very fast and I couldn't cape up with his speed.

(Mar.23/10)

Saba did not generally support or oppose the plasma TV for her learning system. She needs both teachers, namely, the actual classroom teacher and televised teacher. This indicates that, she had different perception toward plasma TV learning. When, compared to the high and low achievers.

Generally, the above idea reveal that, different students based on their performance (achievement),they have different perception toward learning with plasma TV, that is high achievers have good perception, medium achievers held positive perception and negative perception toward plasma TV learning, but low achievers have negative perception toward plasma instruction

4.5.2 Grade Level

Grade level was one of the characteristics of students that use to show the perception of students with regard to learning through plasma TV. From my research respondents' view, students that found on different grade levels have different perceptions toward plasma TV instruction .For instance, students found in grade 9 held negative perceptions compare to than that of students of grade 12. This was observed, when Kebe, a student of grade 12 express his idea in focus group discussion as following:

> *When the grade level of students are increases, the understanding and perception of students towards learning through plasma TV becomes positive. For instance, I have a 4 year experience and I am interested for learning through plasma TV. But, when I was a student of high school level (9-10), I dislike plasma TV lesson. Because, learning through plasma TV and its medium of instruction, itself is new for me generally at that time, I didn't understand as such the delivered lesson through plasma TV.*
>
> (Mar.30/10)

Similarly, Alemu, a grade 12 chemistry teacher, stated:

> *When I teach at high school level (that is grade 9 and 10), students have a high problem of English language. So, those students hate learning though plasma TV. But, when they join preparatory level, they like learning through plasma TV.*
>
> *(Feb.23/10)*

The views of the above teacher and student reflects that the perception of students toward learning through is related to grade, that found in high school (that is grade 9 and 10) in case of English language problem or/ and lack of the experience, they held negative perception toward plasma TV .However, when their grade level increases their experience also increases. From the view of both teachers and students, I came to understand that students from grade 9 to 12 have different perceptions toward plasma TV instruction.

4.5.3 Sex

Sex was one of the characteristics of students used in this study. According to my research participants reposes the perception of students toward plasma TV does not depend on sex of the students. There wasn't any relationship between the perceptions of students toward plasma TV instruction and their sex. Because, sex difference was not regarded as influencing factor on students' perception of plasma TV lesson in teaching learning process. For instance, my research participant Shega, high school director said:

> *Being male or female didn't have impact on perception toward plasma TV. But, the perception of students depends mostly on grade and achievement levels.*
>
> (Feb.17/10)

The idea of Shega indicates that, the sex of students is not having influence on learning through plasma TV. However, students held negative or positive perception due to their other characteristics such as grade level and achievement level. Most of the participant agreed on the above idea of director. For instance, Bifitu, a grade 9 student, she was reflecting her opinion during interview time on the perception of students that found in different sex as the following:

> *First of all I didn't believe that students that have different sex that is male and female have/ reflect different perception toward plasma TV instruction. For example, I am from female student, but my perception not different from male students the problems that face me during transmission also face the male students. So that, due to my femininity didn't developed any kind of perception that is negative or/and positive.*
>
> (16/10)

From the above idea, I understand that the perception of students not depends on their sex, because as the above respondent view femininity not cause for students to hold positive or/and negative perception for plasma TV instruction, even the problem that mug the students regarding with PTV instruction not only for female students but also this problem reflected on male students .In addition to her idea on this issue one of grade 9 student, Efa ,during interview time said that :

As my believe due to masculinity or femininity no one students have different perception toward plasma TV lesson but students hold positive and negative perception due to several cause. Because, I am one of Male student but I have not different perception for plasma TV instruction from my classroom female students.

(Mar.6/10)

The above research participant reflect his believe as the same to Biftu, the students due to their sex different do not have different perception toward PTV instruction. Because as she not developed negative or /and positive perception due to her sex, he also not hold these perceptions due to masculinity. Moreover Kebe, a grade 12 students reflect that his view on the perception of students with related to their sex during focus group discussion as follows:

As my opinion the sex differences of students have not influence on the perception of students toward PTV instruction, because, students of both sex didn't showed different perception toward PTV instruction in case of their sex. For example, I have 4 year experiences in learning with PTV. But up to now I didn't faced student have different perception toward PTV instruction due to his/her sex.

(Mar.30/10)

The above participant idea indicates that students did not reflect different perception toward Plasma TV instruction in case of their sex that is masculinity and femininity. Generally, I understand that from research participants' reflection the sex of students not encourage to develop positive or/and negative perceptions for PTV instruction. Hence, the sex differences of students have not impact on the perception of students towards plasma TV instruction.

4.5.4 Residence

Residence is one of the characteristics of students. The perception of students toward learning through plasma TV not as such depends on their residence background (rural and urban).The data obtained through interview and focus group discussion as showed, most of my research participants that mentioned and not in this paper agreed that, the residence of students does not

affect the perception of student toward learning through plasma TV. For instance, one of grade 9 chemistry teacher, Gizachew, said that:

> *AS I believe that, the locations of students have not impact on the perception of students toward Plasma TV instruction, because, up to now, I don't saw any difference in perceptions on urban and rural area students toward plasma TV instruction in case of their residence.*
>
> (Feb.23/10)

According to the above teacher idea indicates, the students of urban and rural area does not hold different perception toward PTV instruction. Regarding to this view, Abreham, a grade 9 student expresses his opinion during focus group discussion as follows:

> *I think, being a student coming from rural or urban areas doesn't have different perception about plasma TV instruction. For example, I am from rural area but I like learning through plasma TV.I know also my friends from urban area who don't like plasma TV. Any way there are students from both urban and rural areas who like or don't like plasma TV.*
>
> (Mar.30/10)

From the above student's idea reflection, the location of students in urban and rural area did not have impact/influence on the perception of students toward learning through plasma TV. By supporting this idea, Rahel, one of students comes from urban area reflect her idea on this issue in the focus group discussion as follows:

> *As my understanding students that come from urban and rural area have the same perception toward PTV instruction , for me the location of students not affect the perception of students but their interest that they showed for learning might be affect their perception. Because, some of the students that comes from urban area and rural area have interest for their learning and also they have positive perception for plasma TV instruction. For example, I come from urban and I have good perception toward PTV instruction.*
>
> *(Mar.30/10)*

The idea of Rahel showed that the perceptions of students toward PTV instruction were not depending on the location of students. Because, students that found in both areas have the same perception toward PTV instruction. As I understand her idea, she has positive perception as the same to Aberham, the student which was comes from rural that I mentioned above. Generally, as I understand that most of the ideas of research participants' response showed that residence (urban and rural area) of students not have impact on the perception of students toward PTV instruction.

CHAPTER FIVE: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter deals with the high lights of the study, conclusions derived from the findings and recommendations made on the basis of the findings and conclusions.

5.1. Summary

The main purpose of this study was the identification of the perception of student toward application of plasma TV instruction and the application of plasma TV in teaching learning process in Wonji General Secondary School and preparatory in doing so, the study was attempted to find answer for the following basic questions:

1. What does the application of plasma TV instruction look like in the Wonji General Secondary and preparatory school?
2. What are the perceptions of students' toward the application of plasma TV instruction in relation to their characteristics like grade level, achievement level, sex and residence?
3. What are the major advantages and disadvantages of application of plasma TV for instruction purpose?

In order to deal with these basic questions, media in education, the perception of students, critics on the application of plasma TV transmission, the expected role of plasma TV instruction and the role of audiences or students in education are dealt with in the review of related literature. Concerning the data gathering, as indicated in chapter three of this study, qualitative descriptive multiple case study method was used. File data, interview, observation and focus group discussion were employed. EMA experts, managers, the school principal, teachers and students were the subjects of the study. All the data gathered were interpreted and analyzed by narrative description method. From these gathered, analyzed and interpreted data, the following major findings of the study were summarized:

1. The study revealed that low achievers had negative perception where as high achievers had positive perception toward plasma TV instruction.
2. The study disclosed that grade 12 students had better perception towards plasma TV instruction than that of grade 9 students.
3. The study indicated that residential area had no impact on students' perceptions toward plasma TV instruction.
4. It was found out that there was no relationship between the sex of the students and their perception toward plasma TV instruction.

5. It was revealed that the televised teacher didn't take individual differences in to account.
6. The study revealed that advantages of plasma TV include its capacity to present complex laboratory demonstration to be the classroom, abstract concepts in a simple manner and standardized lesson for all students across the country.
7. The study showed that major disadvantages of plasma TV include the inadequate of time allotted for classroom teacher; its speed doesn't fit to the interests of many students and its lack of providing opportunity for repetition.
8. The study revealed that plasma TV could fit only to the interests of fast learners mainly due to their better fluency in English language.
9. It was also found that many classroom teachers lacked necessary training on utilization of plasma TV in the classroom.
10. It was found out that the presence of plasma TV alleviated lack of subject teachers to a certain extent.
11. The study indicated that the interruption of plasma TV transmission due to technical problems was a major problem in school.
12. It was found out that plasma TV had positive impact on students in that it enhanced their interest towards modern information and communication technology.

5.2. Conclusions

Based on the findings summarized above, the following conclusions were drawn:

- The fact that low achievers had negative perception about the utilization of plasma TV instruction would have negative impact on their achievement as well.
- The fact that the televised teachers couldn't consider individual differences in the classroom leads to ignoring the learning styles and interests of diverse learners.
- In schools that lack adequate laboratories, plasma TV instruction could help students at least to observe and gain theoretical knowledge of practical learning.
- Lack of adequate training for teachers in the utilization of plasma TV would not only take more time until the transmission begins , but it also may cause damage to the plasma TV due to lack of technical care on the part of the classroom teachers .
- Despite all its weaknesses, plasma TV would enhance equal opportunity for learning across the nation.

5.3. Recommendations

The following points are the major recommendations made to overcome the problems identified in the study:

1. The MOE, EMA and Regional Educational Bureaus should review (make minor change on the nature of PTV transmission) the use of plasma TV instruction so as to make the delivery more appropriate and to minimize the observed disadvantage like the speed of plasma TV presentation by prepare the plasma lesson in the form of renewable way and by sharing equal time for televised teacher and classroom teacher in the instruction and also make the accent of medium of instruction appropriate for the great majority of students.
2. Wonji Secondary School should strengthen its linkage to the concerned body like Woreda , Zone, and Regional Educational bureaus and EMA in order to build its own capacity for using plasma TV.
3. MOE, Regional Educational Bureaus, Wonji Secondary School should create short term training opportunity for its teachers to equip them with the basic knowledge and skill for utilizing plasma TV.
4. The MOE and Wonji Secondary School should also organize training/ work shop for teachers on way of enhancing students' academic English skills.
5. Classroom teachers should make more efforts to make use of the time allocated for them instead of making constant complaints.
6. The concerned bodies like Woreda, Zonal, and Regional Education Bureau and EMA should carry out the required supervision to follow the way of using plasma TV for classroom instruction in the school.
7. The Regional Educational Bureau and the Wonji Secondary School and preparatory should create the condition to keep on the trained person in the school (to prevent man power turnover), so that the interruption of plasma TV lesson due to technical problems could be alleviated.
8. The Wonji Secondary School and preparation should also promote the development of effective classroom management so as to regulate the misbehavior of students concerning the plasma TV operations.

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Appendix –A

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES COLLEGE OF EDUCATION

DEPARTMENT OF CURRICULUM AND TEACHER

PROFESSION DEVELOPMENT OF STUDIES

Characteristic and Perception of students toward plasma TV instruction

Interview Protocol for Teachers, Students and Directors

First I would like to express my appreciation and grate fullness to be a volunteer to participate in my research, the topic "student's characteristic and perception toward application of PTV instruction". In this study, I am looking to understand the students' views, teachers' views and Directors views with on the perception of students toward the application of plasma TV instruction, how students are perceive the application of plasma TV instruction and how the application of PTV under take in teaching learning process in Wonji Secondary and Preparatory School. In addition, examine the factors and its influence in the perception of students toward the application of plasma TV instruction and in the application, data for the study will be collect through interviews, observation and focus group discussion .The discussion that we are going to have will be secured. I will not use your real names in writing the study. Rather, I will use pseudo name. There are no risk and discomforts, which come along by participating in this study. However, the information that you will give me can be helpful for my research study and might contribute for the well- being or understanding of the overall application of PTV and the perception of students toward PTV instruction.

Introduction

This interview guide is accessible to engender significant data regarding the application of PTV and perception of students toward PTV instruction. In producing data for research purpose it is my convection.

Interview guide for Students, teachers and directors are my conviction & pledge that due consideration must be given to the ethical issues. Accordingly, prior to the actual interview the following ethical consideration were raised & discussed with research participants.

- Participation in the study is on voluntary basis, participants have the authority to permit or refuse the collection of data in any form.
- Full right is deserved to with draw at any time to change ideas or to gather and the overall interpretation to be made belong to participants and the researcher respectively.
- The confidentially and anonymity of information will be strongly maintained. Hence , pseudo names shall be used in the study

Thank you for your cooperative

Appendix –B_1

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES COLLEGE OF EDUCATION

DEPARTMENT OF CURRICULUM AND TEACHER

PROFESSION DEVELOPMENT STUDIES

Interview Guide for Student

1. Do you like plasma instruction?

   1.1. If yes why?

   1.2. If no why?

2. How do you compare plasma teachers and your actual classroom teachers with regard to teaching chemistry?

3. Do you believe that the time allotted for classroom teacher is adequate? If no what should be done?

4. How do you judge your speed to cope up with plasma teacher?

5. Is there opportunity for you to exercise the laboratory activities demonstrated by plasma teacher ?

6. What do you think are the advantage you have got from plasma instruction?

7. What do you think are the limitation of plasma instruction?

8. Is there a change on your result due to learning with plasma TV?

Thank you

Appendix –B_2

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES COLLEGE OF EDUCATION

DEPARTMENT OF CURRICULUM AND TEACHER

PROFESSION DEVELOPMENT STUDIES

Interview Guide for Teachers

1. For how long have you used plasma TV for teaching?
2. How you ever participated in workshops or conferences on ways of utilizing plasma TV effectively?
   2.1. If yes, for how long?
3. Do you believe that plasma TV promote effective teaching learning process ?
   3.1. If yes in what way?
   3.2. If no why?
4. What do you think are the major advantage of using plasma TV in learning process?
5. Do you believe that plasma TV has certain disadvantage?
   5.1 If yes could you tell me the major ones?
6. How do you generally judge the perception of other teacher towards plasma TV in this school ?
7. How do you generally judge the perception of students concerning the implementation of plasma TV ?
8. How do you observe any relationship between students perception towards plasma instruction and their characteristics such as sex grade level ,achievement and residence ?
9. How do you judge the support with regard to the utilization of PTV for instructional purpose from:
   9.1. The school management team?
   9.2. The woreda educational bureau?
   9.3. Ministry of education?
   9.4. Educational media agency?

Thank You

Appendix –B_3

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES COLLEGE OF EDUCATION

DEPARTMENT OF CURRICULUM AND TEACHER

PROFESSION DEVELOPME

Interview guide for the school management team

1. How do you see the utilization of plasma TV in your school?
2. Has the school an instructional media expert?
3. What problem do you observe in the utilization of plasma TV?
4. What do you think about the perceptions of students' toward the utilization of plasma TV in this school?
5. What kind of support does the top management of the school provide in using plasma TV?
6. Do you believe that the time allotted for the classroom teacher is adequate?
   6.1. If "no", what should be done to alleviate the problem?
7. Is there any support from the Regional Educational Bureau?
8. How do you judge the perception of students regarding plasma TV?
9. Have you observed the relationship between the perceptions of the student toward plasma TV with regard to their:
   9.1Sex
   9.2Grade level
   9.3 Residence
   9.4Achievement
10. What have you tried so far to solve the problem in the utilization of plasma TV?

Thank You

Appendix –B_4

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES COLLEGE OF EDUCATION

DEPARTMENT OF CURRICULUM AND TEACHER

PROFESSION DEVELOPEMENT

Interview Guide for Educational Media Agency Officials

1 .How do you explain the role of EMA in promoting the utilization of plasma TV in secondary school?

2. How is your work relationship with school?

2.1 How do you support schools to utilize plasma TV effectively?

2.2. Do you organize workshops and conference for teachers so as to orient them on how to employ plasma TV?

2.2.1 If yes for how long to provide workshop per year on the average?

2.3. What mechanism do you use to assess the impact of your support to schools?

2.4. What do you think generally on the perception of school teachers' toward plasma TV?

2.5. What are the advantages of using plasma TV in teaching learning process?

2.6. Do you think that the utilization of plasma TV has some disadvantages in teaching learning process ?

2.7. How do you explain the perception of students' in the school toward plasma TV instruction?

2.8. Do you think that there is relationship between perceptions of students' toward plasma TV instruction and their : sex, grade level, residence and achievement level?

Thank You

Appendix –C_1

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIESCOLLEGE OF EDUCATION

DEPARTMENT OF CURRICULUM AND TEACHER

PROFESSION DEVELOPMENT

Class room Observation Check list

This check list guides the research to examine the routines of the classroom and there by observe the student classroom activities
(especially their perception) in the school (on the plasma TV transmission).
School:- Wonji secondary and Preparatory high school
Teacher name:- Alemu
Subject :- Chemistry
Grade:- 12^{th}
Lesson 4^{th} period
Length of class session:- 42'
Number of days per week:- 3
Number of students in class:- 60
F:-13
M:-37
Topic of the lesson: Uses of Tin (II) and Tin(IV) Halides
-

Check list table

No	Question for observation	Yes	No
1	The plasma TV is located in a position of a convenient for every of students	✓	
2	Learning materials are accessible and useable to the students		✓
3	Different seating arrangement used to attend the plasma instruction	-	-
4	Students behave as well during plasma instruction	-	-
5	Students actively involved in class activities		✓
6	The plasma transmission provides appropriate time to student to get help from class room teachers.	-	-
7	The class room teacher summarize the main points in the time given for learning process	-	-
8	The students often their span accommodating during plasma TV transmission	-	-
9	The plasma TV transmission flows smoothly without disruption		✓
10	Most students happy in their facial expression while attending the plasma instruction	-	-

Appendix –C_2

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIESCOLLEGEEDUCATION

DEPARTMENT OF CURRICULUM AND TEACHER

PROFESSIONDEVELOPMENT

Class room Observation Check list

This check list guides the research to examine the routines of the classroom and there by observe the student classroom activities
(especially their perception) in the school (on the plasma TV transmission).
School:- Wonji secondary and Preparatory high school
Teacher name:- Gizachew
Subject :- Chemistry
Grade:- 9th
Lesson 3th period
Length of class session:- 42'
Number of days per week:- 3
Number of students in class:- 72
F:-33
M:-39
Topic of the lesson: The Periodic Law

Check list table

No	Question for observation	Yes	No
1	The plasma TV is located in a position of a convenient for every of students	✓	
2	Learning materials are accessible and useable to the students		✓
3	Different seating arrangement used to attend the plasma instruction	-	-
4	Students behave as well during plasma instruction	-	-
5	Students actively involved in class activities	✓	
6	The plasma transmission provides appropriate time to student to get help from class room teachers.	-	-
7	The class room teacher summarize the main points in the time given for learning process	-	-
8	The students regularly have their time span during plasma TV transmission	-	-
9	The plasma TV transmission flows smoothly without disruption	-	✓
10	Most students happy in their facial expression while attending the plasma instruction	-	-

Appendix –D

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES COLLEGE OF EDUCATION

DEPARTMENT OF CURRICULUM AND TEACHER

PROFESSION DEVELOPMENT OF STUDIES

Question for Focus Group Discussion

1. How do you see the application of plasma TV instruction in your school?
2. What is the advantage of plasma TV in teaching learning process?
3. What is the disadvantage of plasma TV in teaching learning process?
4. How do you observe the perception of students' toward plasma TV instruction as the grade level of students' increase?
5. Do you believe that due to sex differences students have different perception toward plasma TV instruction in this school?
6. Do you believes that students' that come from urban and rural areas have difference perception toward plasma TV instruction in this school?

Thank You

Appendix-F_1

Characteristic of respondents (students)

No	Pseudo name	Sex	Grade level	Residence	Achievement level
1	Biruk	M	9	Urban	40.5
2	Gemeda	M	9	Rural	85.1
3	Efa	M	9	Rural	67
4	Wobayehu	F	9	Urban	47
5	Alem	F	9	Urban	45
6	Aberham	M	9	Rural	85.9
7	Biftu	F	9	Rural	69
8	Shalo	F	9	Rural	69
9	Dawiti	F	12	Rural	70
10	Saba	F	12	Urban	70.5
11	Merga	M	12	Rural	55
12	Tamerat	M	12	Urban	45
13	Kebe	M	12	Urban	68
14	Rahel	F	12	Urban	59
15	Wondu	M	12	Urban	92.5
16	Mebrate	F	12	Urban	70

Appendix-F_2

Characteristic of respondent Teacher and EAM Officials

No	Pseudonym	Sex	Position
1	Shega	F	Director (high school)
2	Awol	M	Director (preparatory)
3	Beshadu	F	Teacher (chemistry) 12
4	Ayele	M	Teacher (chemistry) 9
5	Gizachew	M	Teacher (chemistry) 9
6	Alemu	M	Teacher (chemistry) 12
7	Daniel	M	EMA manager
8	Desalign	M	EMA Expert (chemistry)

Declaration

This thesis is my original work and has not been presented for a degree in any other University and that all sources of material used for the thesis has been dually acknowledged.

Etagegn Taddesse		June 22, 2010
Name of candidate	**Sign**	**Date**

This thesis has been submitted for examination with my approval as a University advisor.

Dr. Dessu Wirtu		June 28, 2010
Name of Advisor	**Sign**	**Date**