ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

THE PROBLEMS AND PROSPECTS OF IMPLEMENTING INSTRUCTIONAL SATELLITE TV PROGRAMS IN SECONDARY SCHOOLS OF SOUTHERN NATIONS NATIONALITIES AND PEOPLES REGION (SNNPR)

BY

ANAGAW TADESSE WOLDEYES

JULY 2007

THE PROBLEMS AND PROSPECTS OF IMPLEMENTING INSTRUCTIONAL SATELLITE TV PROGRAMS IN SECONDARY SCHOOLS OF SOUTHERN NATIONS NATIONALITIES AND PEOPLES REGION (SNNPR)

A THESIS SUBMITTED TO THE
SCHOOL OF GRADUATE STUDIES

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
OF THE DEGREE OF MASTER OF ART IN
EDUCATIONAL PLANNING AND MANAGEMENT

By

Anagaw Tadesse Woldeyes

July 2007

ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

THE PROBLEMS AND PROSPECTS OF IMPLEMENTING INSTRUCTIONAL SATELLITE TV PROGRAMS IN SECONDARY SCHOOLS OF SOUTHERN NATIONS NATIONALITIES AND PEOPLES REGION (SNNPR)

By

ANAGAW TADESSE WOLDEYES

APPROVED BY THE EXAMINATION BOARD

Yekunoamlak Alemu (Dr.) — Chairman, Department of Graduate Studies — Signature

Zenebe Baraki (Dr) — Advisor — Signature

Gizmu Tessera — External Examiner — Signature

Yalew Endaylay — Internal Examiner — Signature

ACKNOWLEDGEMENTS

I am very grateful to my advisor Dr. Zenebe Baraki, for his continued useful suggestion from the very outset until the end of this work.

I am particularly grateful for the encouragement my parents and brothers have provided during every step of this work.

My special thank go to Seblewongel, Amesale, and Hewan for the indefatigable way in which they supported me morally, materially, and financially.

TABLE OF CONTENTS

LIST OF TABLES

ABBREVIATIONS

AV	Audio Visual
CSS	Comprehensive Secondary School
EEPCo	Ethiopian Electric Power Corporation
EMA	Educational Media Agency
ETV	Educational Television
ICT	Information and Communication Technology
ISTVP	Instructional Satellite Television Programs
IT	Instructional Technology
ITV	Instructional Television
MOE	Ministry of Education
REB	Region Education Bureau
SNNPR	Southern Nations Nationalities and Peoples Region
SSS	Senior Secondary School
TV	Television
USAID	United States Agency for International Development
WEO	Woreda Education Office
ZEO	Zone Education Office

ABSTRACT

This study was undertaken mainly to find out the existing problems in implementing Instructional Satellite TV Programs in secondary schools of SNNPR. In the study it was also tried to assess the attitudes of teachers and students towards ISTV programs.

The study employed descriptive survey method. The rationale behind using this approach was that the study intended at gathering data, facts and figures that provides descriptive information on the current conditions and practices of Instructional Satellite Television programs, and enables identification of the existing problems.

Simple random sampling technique was employed to select six secondary schools in five Zones and one "Special" Woreda of SNNPR. The same technique was utilized to select thirty-six teacher respondents. Student respondents were selected making use of quota sampling technique.

Accordingly, 600 students from six secondary schools were involved in the study. Besides, two REB officials and two media experts from EMA were also participants of the study.

To gather data from the aforementioned groups and schools, two types of questionnaires, interviews and classroom observations have been utilized. The data obtained was analyzed using simple frequency counts and percentages. Moreover, chi-square goodness-of-fit statistical test was employed to check the attitude of students and teachers toward ISTV programs.

Based on the findings of this study, schools in the region have been found well equipped with plasma TV and other program receiving materials. However, the overall implementation of the program in the region was being constrained by inadequate supply of instructional resources such as TV lesson teacher's and students guides, absences of well-trained technician, inadequate number of teachers in each subject area, high teaching load, too fast presentation of the ISTV program, almost absence of pre-broadcast activities and low level of zone and woreda education offices' support to schools. In addition, subject teachers in the region lack proper orientation or training about the utilization of plasma TV sets and programs for teaching in the classroom. Classrooms' physical setting was found to be satisfactory to realize the program. It was also found out that teachers have a strongly positive and students have neutral attitudes towards the ISTV programs.

Finally, it was suggested that worksheets need to be prepared in each subject to solve the shortage of time, and ISTV programs should also be digitalized to minimize problems that may encounter due to program transmission failure. In addition, the study suggested the provision of short-term in-service trainings at woreda or school level to upgrade the skill and knowledge of subject teachers.

CHAPTER ONE

Introduction

1.1. Background of the Study

Limited and inequitable access, lack of quality and relevance, and continuous decline in quality and standard were the long standing problems associated with the Ethiopian education system (MOE; 2002, p.8). The system was short of qualified and competent teachers. According to MOE (2004) only 40.6% of teachers who had been serving in secondary schools were qualified for the level. In Ethiopia the standard set for the pupil/teacher ratio for secondary school is 40. However, the Ethiopian Annual Education Statistics Report for the year 2003/04 indicates that it was 51. In addition, the system was short of important school facilities like pedagogical centers, libraries and laboratories. Of all schools with grades 9 and above in Ethiopia, only 85.4% of them had library facilities and 74.7% had pedagogical centers in the year 2003/04 (MOE; 2004). In relation to the availability of laboratories, the Annual Education Statistical Report of Ethiopia for the year 2004 indicates that 89 out of 707 secondary schools did not have laboratories. Besides, the report shows that the pupil/section ratio at secondary level for the same year was 78. This indicates the fact that schools were working packed with huge number of students.

Due to the shortage of qualified teachers, classrooms, laboratories and libraries it has so far remained difficult to achieve the outcomes expected from the system. In order to fill this gap and make education the wheel for the entire economy of the nation, the Ethiopian government undertook a radical measure to integrate ICT in to the education system. As of September 2004, Ethiopia has launched instructional TV broadcasts to secondary schools through satellite. In doing this, the

Government believes that the long-standing educational problems like shortage of qualified teachers, educational mal-distribution and inefficiency could be minimized (EMA, 2004; p. 02). In favor of this Neuronet (2005) contends that

> ...using ICTs enhance administrative and teaching efficiency, alleviate under-resourcing in specific areas (example lack of textbooks or learning support materials), address equity issues through enabling equality of access to knowledge, resources and expertise, or supports teachers who may be under equipped to deal with new teaching challenges (p. 23).

Bates (1986) argues that the use of TV for education in third world countries is justified, for it improves the quality of existing educational provision and equalizes or spread more widely educational opportunities the democratization of educational opportunities. In addition, extensive studies have been made regarding the effects of the use of ITV on students' learning. MacLennan and Griffith (1967) indicate that in general students taught by TV do as well as or better than students taught by conventional means. Mohanty (1984) also indicates that coupling the teaching learning process with ICT has a significant positive influence on the scholastic achievement of students. The study revealed that students who have been continuously exposed for educational TV programs could perform better in achievement tests than others who do not.

But this does not mean that mere exposures of students to TV programs guarantee the fulfillment of instructional objectives. Rather much has to be done to integrate the technology into the education system. Otherwise the TV programs, which have proved to be a potential medium in improving the teaching-learning situation, could be a frustrating experience if the technology is just patched on to the existing educational system and no special and consistent efforts are made to evolve new sub-systems and new infrastructures to go with the requirements of the technology (Atkinson et al, 1984; p. 83).

Based on the evaluation of educational media, Delors (1998) suggests that

> ... the technology per se is no solution or panacea to educational ills; it has to be employed within a multimedia system. Linked with traditional approaches and infrastructures, not as impressive add ons or as stand-alone alternatives to traditional forms of instruction (p. 305).

In order to achieve at the intended level through using the technology, the concerted effort of all in the sector is highly required. Here, the classroom teacher shouldered the ultimate responsibility. He/She is the frontline actor in the overall attempt of realizing any educational innovation at school level. It is how the teacher uses a certain innovation for teaching learning in the classroom that may greatly determine students' learning. In this regard, Heinich (1996) argues that what is important is not so much what machines are present in the classroom but rather how the teacher guides students in their use. Therefore, he suggests that teachers need to be properly motivated through orientations and incentives. Besides, the programs must consider the students local factors such as culture and language to make effective use of the technology (Mohanty, 1984; p.45).

The Ethiopian Education and Training Policy focuses on quality, equity, accessibility and relevance of education. It gives due attention to the provision and appropriate usage of educational facilities, technology, organization and management so as to strengthen the teaching learning process and the expansion of education (MOE, 2002). Accordingly, ICTs are currently applied in the education sector to improve the educational delivery system. The Satellite TV Education project is part of the Government's initiative to integrate ICTs into the education system. The project is aimed at providing secondary education via satellite and TV technologies. It involved the preparation of TV programs in six subjects (i.e. English, Mathematics, Physics, Chemistry, Biology, and Civic and

Ethical Education), install satellite education receiving materials in the classrooms, erection of generators for those schools that did not have electricity, provision of trainings for school directors, media men, and selected teachers on the utilization of TV programs and techniques of operation. After accomplishing all these, the provision of secondary education through satellite TV began since September 13, 2004. The completion of the project was intended to reduce the long-standing problems in the sector pertaining to distribution (provision) such as poor quality instruction and inequity. Besides, it was expected that the standard of secondary education would be maintained. Therefore, this study was aimed at investigating the problems encountered by secondary schools of Southern Nations Nationalities and Peoples Region (SNNPR) in implementing instructional satellite TV programs.

1.2. Statement of the Problem

Instructional TV is seen as a great assistance where the educational system has some particular deficiencies such as shortage of qualified teachers, lack of textbooks, and laboratories. Accordingly, instructional TV broadcasts are intentionally prepared to support the classroom teacher, to enhance the teaching learning process and to be used as a learning resource in order to overcome the aforementioned deficiencies of the system.

Currently there are six subject areas, in which TV programs are prepared and broadcast to secondary schools in Ethiopia. These include English, Mathematics, Physics, Biology, Chemistry and Civics and Ethical Education all for grades 9-12.

Using these technologies in the teaching learning process is a recent phenomenon in Ethiopia. We still find very few researches conducted so far on the utilization and implementation of instructional satellite TV programs at school level. And those conducted in the area so far revealed the reality that problems exist in various aspects such as preparation, producing and broadcasting, receiving and utilizing TV programs, provision of instructional resources for schools in Ethiopia.

For instance, the study conducted by EMA (2005) indicates that there is resistance on the part of teachers to accept the newly introduced technology. Damtew (2005) contends that the technology type versus process (production, recording, distribution, and utilization and storage) in using plasma TV has not yet practiced in Ethiopia. He further discusses that Ethiopia is currently utilizing ISTV program records produced in South Africa. This results in different problems such as the speedy pace of the narrator, ease or difficulty of comprehending contents of different subjects for students having different background of English language skills and other problems that cannot be adjusted accordingly.

More over, Yared (2006) has also pointed out that implementation of ICT in education in Ethiopia lacks conceptual and theoretical framework to integrate ICTs in the classroom and develop teachers' capacity in ICT. The study of the successes and challenges of teaching grade 9 English through satellite TV in three selected high schools in Addis Ababa (Wonderad, Kokebe Tsebaha and Menilik II) by Semagne (2006) also indicate that the teaching learning process is affected by poor English language abilities of students.

The studies conducted so far on ISTV such as Semagne (2006) and Ermiyas (2006) have considered Addis Ababa region as the main source of data. The region is relatively better in fulfilling school infrastructures, qualified teachers and instructional materials. In reality, the situation gets worse in those rural secondary schools of regional states. Consequently, in these areas the process of implementing Instructional Satellite TV Programs by schools may have a different picture.

These were the facts why this research have been conducted on the process of implementing instructional satellite TV programs by secondary schools in SNNPR. Therefore, conducting a study on the utilization as well as implementation of instructional TV broadcasts possess the urgency to know the status of the program, how to better integrate the technology and exhaustively tap its advantage to achieve the intended educational goals. Based on this rationale, this study attempts to investigate the major problems encountered in implementing instructional satellite TV broadcasts in SNNPR secondary schools, and suggests measures that have to be taken to tackle the problems.

Accordingly, this study attempts to find answers for the following research questions.

1. What are the major constraints that affect the implementation of instructional satellite TV programs in secondary schools?
2. What is the attitude of students and teachers towards the newly introduced instructional satellite TV broadcasts?
3. Are the ISTV programs organization and presentation appropriate to the learners?
4. Is the classroom's physical setting conducive for implementation of instructional satellite TV programs?

1.3. Objectives of the Study

The purpose of this study was to assess the major problems encountered in implementing instructional satellite television program in secondary schools of Southern Nations Nationalities and Peoples Region (SNNPR).

More explicitly, it aimed at

1. Finding out problems existing and suggesting improvements needed to make the use of instructional satellite TV programs implementation more effective and relevant.
2. Assessing the attitude of students and teachers towards instructional satellite TV programs
3. Investigating the appropriateness of program organization and presentation to the learner.
4. Assessing the extent to which the classroom's physical setting is conducive for implementation of instructional satellite TV programs.

1.4. Significance of the Study

This study is expected to have the following contributions. First, it sheds light on theoretical framework by indicating the extent to which educational satellite TV program is utilized and integrated with the existing new curriculum.

This study may also help planners to take decision either to strengthen TV programs instruction or plan other alternative strategies. It is, therefore, significant to study the problems encountered in implementing the program and suggest possible solutions.

Moreover, this study has relevance for the teachers as well. The classroom teacher is the major element that influences students' behavior in various ways. The major concern of the teacher is however, students learning. If this study could prove any positive results, it would strengthen their belief for better utilization of the medium in teaching learning situation. It may thus help the teachers to take the technology more seriously. Furthermore, it is also significant to know to what extent the utilization of the technology for education is helpful for fulfilling the national goals like equitable distribution of educational services, enhancing access, and maintaining quality, relevance and efficiency of education etc. Accordingly, the educational planners and administrator will reshape their further plan of action. Finally, since much research has not been done in the area in Ethiopia owing to the newness of the technology this study may provide additional data for further similar researches.

1.5. Delimitations of the Study

This study is limited to assessing problems encountered in implementing instructional satellite TV programs in secondary schools of SNNPR. The study considers only governmental schools. This is because the program is not functional in the private, non-governmental, missionary and organizational schools. The region is selected, for the researcher has worked in the area as secondary school teacher (particularly he had practical teaching experience using plasma TV in Waka Senior Secondary Schools).

1.6. Limitations of the Study

A challenge to access written materials on related topics with this study was one of the limitations. In addition, since teachers were participants of the 2007 national census, grades 10 and 12 were obliged to end classes at an earlier date. As a result, it was almost impossible to apply the research sampling techniques as intended on grades 10 and 12 students at Waka, Dilla and Bonga Senior Secondary Schools. Rather the already available students have been included in the study. Financial constraint was the other challenge during conducting this study.

1.7. Operational Definition of Terms

The operational terms that have been utilized in the text of this paper are defined as follows:

Instructional Satellite TV Programs: refers to TV programs prepared in six subjects: English, Mathematics, Biology, Civics, Chemistry and Physics for grades 9-12 and transmitted to secondary schools in Ethiopia through satellite from EMA.

Implementation of ISTVP: the actual use of programs in the classroom and carrying out other related activities to put the program in to practice.

Secondary Schools: It includes those government schools that have either grades 9-10 or grades 9-12 levels.

ISTV Program Organization: refers to the make up of ISTV program. The presence and arrangement of graphics, photographs and laboratory type demonstrations in the ISTV program.

ISTV Program Presentation: refers to the way the programs broadcast to students such as speed and clarity of presentation.

Physical Setting of the Classroom: the condition in which the TV and accessories exist in the classroom. It also refers to the nature of the building in which the classroom is made.

Private Schools: are schools, which are owned and administered by the private sector. In these schools instructional satellite TV program is not functional.

Organizational Schools: are schools opened and administered by foreign or domestic non-governmental organization. In these schools too, instructional satellite TV program is not functional.

1.8. Organization of the Study

This study has five chapters. Chapter one provides introductory information about the study. Chapter two deals with review of related literature. Chapter three describes the methodology employed to conduct the research. Chapter four refers to data presentation, analysis and discussion. And chapter five deals with summary of major findings of the study, conclusions drawn and recommendations suggested.

CHAPTER TWO

Review of Related Literature

In this chapter the existing literature on instructional television has been reviewed which has relevance for the present study.

The literature related to instructional and educational technologies, the different views about the role of technology in education, the attitude of students and teachers towards instructional TV, strengths and limitations of TV instruction, development of ITV in Ethiopia and factors that affect implementation of instructional satellite TV programs is presented below.

2.1. Technology and Education

Technology is defined as "a rational discipline designed to assure the mastery of man over physical nature, through the application of scientifically determined laws"(Simon 1983 in Miller, 1987, p.90). McDermott (1981) defines by saying; "systems of rationalized control over groups of men, events, and machines by small groups of technically skilled men operating through an organized hierarchy". Finn's (1960) definition of technology goes beyond machinery and includes processes, systems, management and control mechanisms both human and non-human. Miller (1987) attempts to provide an integrated definition of technology by considering all the above as follows: "Technology is the systemic and systematic applications of behavior and physical sciences concepts and other knowledge to the solution of problems." Having these meanings of technology in mind, what is its contribution to the development of science, industry, business, education, etc.?

The advancement of technology brings about successful transformation in science, industry, and business. In science, automated computation allowed measurement and comparisons never before possible.

Simulations made whole classes of natural phenomena accessible and opened to experimentation. In industry, repetitious and well specified processes suggested computerized and roboticized solutions, eliminating the errors and hazards that come with human boredom. In business, the flexibility of the word processor over the typewriter was immediately obvious. This new technology has fuelled exponential growth in society's ability to generate, exchange and consume information. In each of these fields, clear procedures combined with technology led to quantum leaps in efficiency (Dwyer et. al., 1997: p. 35).

Technology's role in schooling is not so obvious, in part because the process and product of formal education remain largely unspecified. Learning and teaching may be the fundamental processes of schooling, but perspectives on learning are constantly changing and images of teaching vary widely (Greene, 1979 in Dwyer et. al., 1997). Some argue that teaching is clinical pursuit, where practitioners control instructional variables (Smith, 1963 in Dwyer et. al., 1997). Others view it an enterprise, where teachers create learning communities and focus on social processes (Dewey, 1963 in Dwyer et. al., 1997). Or, to some, the practice of teaching might be more like therapy, where a teacher recognizes unique moments that present students with opportunities for growth and capitalizes on them (Buber, 1957 in Dwyer et. al., 1997). None of these images of teaching has proven superior to any other.

Learning outcomes are equally subject to debate. There is a raveous clash over educational standards. What are they, and should define them? Should standards be set by local, state, or national groups? Should parents, professional educators, policy makers, or business and industry leaders drive the process? How do you account for regional differences?

Due to constantly changing views on learning and teaching technology's role on the extent of learning remained controversial. After reviewing many studies that compare instructional television with classroom (Conventional) instruction Schramm (1977) indicates that the more carefully such comparisons are designed and controlled, the more likely they are to show no significant or consistent differences in learning from media than other sources, such as learning from face-to-face teaching or from other media. On the other hand, others (Reid and MacLennan, 1967; p. 345) argue that students taught by TV do as well as or better than students taught by conventional means. Nevertheless, whatever the impact on learning the role of technology for education in third world countries like Ethiopia, where the educational system has some particular deficiencies such as shortage of qualified teachers, lack of textbooks, and other facilities would be unquestionable and significant.

The other issue worth emphasis is on the meaning of educational technology. It has no universally agreed upon definition. Most consider it as such electronic gadgetry as film projector, tape recorders, television sets, and micro-computers used as teaching tools (Meierhenry, et al, 1984; p. 321). On the other hand, Cleary (1976) in Miller (1987) defines educational technology as, "the overall methodology and set of techniques employed in the application of instructional principles". Others definition attempts to be comprehensive and included the physical materials as well as methods of performing tasks that require no special equipment. To cite, AECT Task force in Miller (1987) defines it as, "a complex, integrated process involving people, procedures, ideas, devices and organization, for analyzing problems, and devising, implementing, evaluating and managing solutions to those problems, involved in all aspects of human learning". The following definition of the Commission on Instructional Technology substantiate the aforementioned meaning of educational technology: "a systematic way of

designing, implementing evaluating the total process of learning and teaching in terms of specific objectives, based on research in human learning and communication and employing a combination of human and non-human resources to bring about more effective instruction". (Unwin et. al, 1988:101). Here it is also essential to differentiate the meaning of the term that is often used interchangeably with educational technology, instructional technology (IT). Instructional technologies need to be viewed with in the general picture of educational technologies, because imparting of instruction is one of the sub-processes of achieving the goals and objectives of the comprehensive process-education. It is the systemic and systematic applications of behavior and physical sciences concepts and other knowledge to the solution of instructional problems (Miller, 1987.p.93). It is one of the parts and sections of the entire phenomenon relating to the technology of education. According to Aggrawal (2005) instructional technology is concerned with determining and providing appropriate stimuli to learner to produce certain types of responses for making learning more effective. In general, while educational technology provides general support to the teacher, instructional technology carries a definite part of the curriculum to the students at regular intervals. The connection between educational and instructional technologies has been best described by Miller (1987) as follows.

> *Instructional technology can be viewed as a subset of a larger technology, that is, educational technology. To illustrate, educational technology might be a combination of instructional, learning, developmental, and managerial technologies. In turn, educational technology could be combined with others to form an even larger or higher order technology.*

The existence of different approaches to learning influences how instructional technologies are designed and used. In this regard there are two competing schools of learning theory. The behaviorists and cognitivists, while behaviorists stress internal, or learners, control over

mental processes (Heinich et al 1996: 16). Behaviorists specify behavioral (performance) objectives, and then limit instruction to whatever is necessary to master those objectives. And it is successful in teaching basic skills and knowledge. On the other hand, instructional designs based on cognitive psychology are less structured than those based on behavioral psychology. They allow learners to employ their own cognitive strategies, and they encourage interaction among students. It is successful in teaching learning tasks that require problem solving, creative behavior, or cooperative activity.

2.2. Educational and Instructional Television

Instructional television is television designed to teach students a specific body of material as part of their formal education, either on the elementary or advanced stages of learning (Gordon, 1961; p.8). The International Encyclopedia of Education (1994; p. 2891) defines ITV as "the programming designed for a specific instructional task." The term ITV is used to differentiate between community educational TV programs and the use of TV for direct formal instruction. Educational Television (ETV) generally denotes any TV, which is used for imparting education. It includes ITV and non-commercialized TV programs (Behera, 1995; p. 71). However, ITV is meant to describe the use of TV for formal courses regardless of age, of grade level and for in-school instruction in parts of courses for direct teaching or for facilitating lecture-demonstration (Mohanty, 1984; p. 83). Sikes (1980) differentiated ETV and ITV based on the nature of learning environment and age of audience as follows.

> *While educational television is targeted to a multi-age audience in a home setting, instructional television is designed to help students achieve identified, specific learning goals under the administration and supervision of professional educators in a formally structured learning environment (pp. 9-8).*

The way in which TV is used in a certain classroom for instructional objective is dependent up on the function it is called upon. According to Gordon (1961) there are three main potential uses for televised instruction: Enrichment, cooperative teaching and total teaching. Enrichment refers to when the TV is used to enrich ongoing instruction similar to that of any other audio-visual device. It is employed either to clarify obscure material, provide specific illustrations of points made in class, or to expand further ideas brought up in the classroom. Cooperative teaching refers to when the TV may provide the lion's share of actual teaching. And total teaching when the televised instruction carries the entire responsibility, both for motivation and teaching of students.

Furthermore, the utilization of ITV programs can be either passive or interactive. Willis et al. (1978) indicates that passive programs are distributed through videocassettes. Interactive ITV programs, however, provide opportunities for viewers' interaction either with a line instructor or a participating students' site. For example, two ways TV with two way audio allows all students to view and interact with the teacher. At the same time, cameras at remote sites allow the teacher to view all participating students.

2.3. The Role of Television in Education

As an audio-visual device that can be used to support the teaching-learning process TV instruction has numerous advantages as well as limitations. Mohanty (1984) cites the following as advantages of TV for education.

- TV is a convenient and economical means of reaching enormous cross-section of the population with simultaneous presentation.
- TV is capable of helping to overcome learning barriers for many persons presenting important ideas, moulding attitudes, providing

information in ways that demand neither high verbal proficiency nor physical presence at the scene of action.

- TV is a means of multiplying "personal" contacts for outstanding TV instructor for audience all over the country or the world.
- TV is capable of helping to bring about needed social improvements and developments.
- TV combines the best elements of radio with the potency of motion pictures.
- It uses all other audio-visual (AV) materials
- It has the quality of immediacy
- It is capable of creating interest and motivation.

Besides, TV has the power to create a sense of reality in the classroom during the actual scene of teaching-learning process. Supporting this idea, Chester et al (1978) says educational TV programs may use as their subject matter real people and the material of life in a way that is beyond the capacity of the classroom teacher or the writer of books. TV, according to Chester, offers certain teaching assets to teaching that are not otherwise available through the use of motion picture film or recording. TV can also create special motivation on the part of the student, which in turn brings attentiveness during learning. Cassierer (1984) also describe the advantages of ITV as 'TV magnifies objective in a clear, accurate and telling way, and encourage sustained attention, careful observation and attentive listening. It also has a feature of taking field trip to distant places with out actually leaving the classroom.

Risk (1958) point out that TV provides first hand information, an excellent means of motivating students, and an opportunity to train students in listening and note taking. It can extend the influence of great teachers from a few students to met hundreds or even thousands, and used to avoid duplication of expensive laboratory equipment and special and expensive setups can be shown and demonstrated to students.

Several researchers have pointed out the fact that the use of audio-visual materials stimulates thinking and understanding (Kinder, 1959; p.176).

Waniewick (1972) says that the media have great potentialities to enhance motivation, willingness to learn, persistence, which are the driving force of learning.

- It has enormous potentiality for motivating less 'captive' audiences, for evoking and sustaining interest in learning.
- TV can make education timely, voluntary and personal.
- It can make the learner meet renowned specialists and experts, personalities from the cultural, artistic, social and political world. It can bring into the educational process images and sounds of contemporary life in all its manifestations occupying in all parts of the world.
- Viewing and hearing an event while it is taking place gives the viewer a sense of expectancy, a sense of participation in reality, and holds his attention and interest. The medium of TV is immediate, realistic, intimate, and revealing. One of the TVs outstanding educational advantages is its ability to display visual materials with ease and effectiveness. The classroom teacher in the conventional classroom often finds the equipment use in other medium difficult to operate and too heavy or bulky to transport. In addition, scheduling problems sometimes prevents him using helpful materials at the appropriate times. Students sitting in the back rows frequently cannot see the blackboard, hanging charts, maps or experiments. Passing materials around the room is distracting. In contrast, the teacher who uses TV can project visual aids effortlessly and with superior results (Frantz, 1965; Howe, 1983). The medium is cost effective through providing quality education if utilized extensively. (EMA, 2005).

TV could be used to teach very large classes with corresponding savings in teacher time and classroom space.

Cable (1965) also describes the following advantages of TV in education.

- It experiences the combination of sound and picture received instantaneously on all TV screens.
- TV makes it possible for the talents of the best teachers to be put at the disposal of all schools within range of the transmitter.
- TV can employ all other audio and visual aids and combine their effectiveness in the one medium.

2.4. Limitations of TV as Instructional Tool

As any other medium one finds a number of shortcomings in the educational uses of TV. According to Chester et al (1978) TV lacks reciprocal relationship. Doubtless the gravest shortcoming to the educational use of TV is the lack of a reciprocal relationship between the teacher and the student. There is no way for the student at home or in the classroom to ask questions of the studio teacher during the broadcast. Nor it is possible for the teacher to read the students' faces to determine how well the material is being understood and whether or not another example or analogy is required to clarify a particular point. Gordon (1961) indicates that one of the strengths of our educational system is flexibility which permits variation of procedures from school to school allowing different teachers to exploit their individual talents, vary their materials, teaching methods and subject matter to meet needs of individual students. TV is criticized because it needs standardization in these matters.

TV programme is also criticized to be the most expensive and sophisticated medium. Huge amount of expenditure is required in providing sets and in maintenance and utmost care should be taken in

utilization. Otherwise there would be enormous wastage which most of the developing countries cannot afford (Mohanty, 1984; p. 84), Moreover; ETV is less effective when the feedback response is important, and when discussion and give-and-take between the student and the instructor are needed (Sharma, 2005; p. 62).

He added that TV is a viewing and listening device only. While it is going on, no further action is possible. If a student is uninterested, he may prefer his own daydreams, or he may use the TV period to catch upon his sleep. TV instruction does not allow participation of student during the teaching-learning process. In favor of this, Sharma (2005) describes it as follows.

> *There can be no audience participation, no opportunity as with a book to pause and reflect on what has been said, and notes are likely to be scanty because one must watch the picture, while it is not unnecessary to watch a lecture (p. 64)*

Perhaps the chief disadvantage is that the instructor proceeds at his own rate, and there is no possibility of adapting instruction to individual differences among the viewers in intelligence or background. During the case in which extremely fine, detailed quality images are required TV is not as clear as those of other visual media such as slides or film. (Atkinson et al, 1984; pp. 222-223)

Educational television has thus raised more controversies, more doubts and misgivings than any other innovation in education. Schramm (in Mohanty, 1984) had revised 393 studies comparing educational or instructional television with conventional classroom teaching in schools and supported the following generalizations.

- TV has been used with greater success in lower grades than in high schools or colleges.

- TV instruction appears to have been most successful in Mathematics, science and social studies and less successful in history, the humanities and literature.
- Particular subjects that require demonstration, experiment, interaction and discussion.

2.5. Inputs for Implementing Instructional Satellite TV Programs

Planning, designing and broadcasting instructional satellite TV programs alone will not guarantee the attainment of educational objectives unless conducive environment is created with in schools for effective utilization of programmes. Availability of receiving sets is the first precondition for utilization of educational TV programmes. And to realize the ultimate objective of the entire programme demands systematic organization of school resources which in turn enables effective implementation of the programmes. The availability of trained teachers, adequate accommodation for students, plasma TV sets, etc. inevitably determines the success of the program. Above all the responsibility of the classroom teacher would be challenging, strenuous and indispensable. In this regard, Mohanty (1984) describes the importance of the teacher in the Satellite Instructional Television Experiment (SITE) of India that aimed at accelerating educational development in the villages, which were deprived and backward in many respects as follows.

> *Crores of rupees were being spent on the project and hundreds of workers, experts, administrators, technicians, educationists and scientists were involved in preparation, production and utilization of the programmes. But the teacher was at a crucial position to adequately utilize the outcome of such efforts in the service of the young children living in rural areas. (p. 54)*

This does not mean that the success of ITV entirely fall on the shoulder of the classroom teacher. However, school directors, supervisors, unit-

coordinators, department heads, teachers and students in the school have equal responsibility to realize the effectiveness of the programmes (EMA, 2005; p.16). In addition the roles of parents, woreda and zone education bureau and media experts and the television teacher is enormous (EMA; 2004, p.13) The most effective and imaginative realization of education goals comes from co-operation among classroom teachers, educational planners and administrators, programme producers etc. The entire ISTV project must be viewed as the teamwork of the aforementioned groups and, as in all co-operative efforts, incompetence from one quarter can seriously mar the good work of the other members. To put it differently, utmost effort and determination of these individuals is the greatest input that has enormous influence on the outcomes of the entire project. Without these, no amount of equipment, nor the latest gadget, can turn the trivial and the dull into the important and exciting. In connection with this, Miller (1966) has described that

> *As an instrument of communication, television is what the men who are using it make of it. Incompetence on a studio floor will be transmitted into incompetence in the receiving classroom. (p. 84)*

In general, it is to emphasize that the success of instructional satellite TV programmes rely on all these bodies and the degree of co-ordination and liaison among them. Therefore, this part will attempt to discuss about the nature of various inputs that are essential to implement instructional satellite TV programs, followed by discussion of views on program utilization and, finally presents the factors that may hinder programme implementation at school level.

2.5.1. Resource Allocation

Resources of various natures are crucial to meet a high standard of efficiency in technological operations, programming, utilization, decision making, provision of services and manpower.

Allocating qualified manpower at all levels staring from the production and broadcasting center to user teachers in the classroom determines the success of the programme. As cited in Teshome (1998) the initiation of most projects depended on the use of foreign expertise due to the scarcity/absence of local personnel who could perform the type of operations required by educational broadcasting.

According to Jamison and McAnany (1978) there are two main areas of concern in financing educational broadcasting in developing nations. The first of these has to do with the strong efforts required in rising funds coupled with working out a sound political strategy for getting budgets approve in projects. The second aspect refers to the budget allocation strategy or how money is distributed for various activities of the project. In educational TV broadcasting some of the most common physical resources may include such components as production and transmission facilities, reception facilities, maintenance facilities, power resources and buildings. And Salah (1994) as cited in Teshome (1998) clearly indicate that these facilities are scarcely available or do not exist in developing countries. Thus, he suggested the need to take special consideration on this aspect.

2.5.2. Instructional Development

Instructional development is the process of analyzing needs, determining what content must be mastered, establishing educational goals, designing materials to help reach the objectives, and trying out and revising the program according to learner achievement (Heinich, 1996; p. 410). The content of ITV programmes is one of the factors responsible for success or failure of the television. Besides, electronic motion pictures with attendant sound effect, the content of the programme provides the basic edifice of the whole programme. It is a kind of map, a blueprint of

what is going to be in the TV programmes. (Mohanty,1984; p.91). Therefore, when designing the content of ITV programs important aspects of the learners such as age group, experiences, interests, attitudes, inclinations and educational level should be taken into account. Socio-cultural background and psychological profile, homogeneity or heterogeneity, rural or urban nature of the learner should also be considered (Mohanty, 1984; p.92). In favor of this, Kinder (1959; p. 438) says, "... the content of ITV ought to be within the background, experiences, interests and maturity level of pupils." For example the age of students determines their level of understanding. The lesson may need to be simple and specific if students are young because they may not be able to deal with abstract and complex ideas.

Some of the other points that need to be considered in designing the contents of ITV programmes are described by Mohanty (1984; p. 92) as:

- *Specific Objectives*: Besides the general objective like instruction expected of a programme, specific objectives has to be determined for each ITV lesson at first.
- *Peculiarities of the medium*: it is essential to consider the peculiarities of the TV programme particularly its fleeting nature or temporalness and its one-way communication. The images succeed one another very quickly and cannot be caught hold of at any point for minute observation. It is therefore necessary that the points to be emphasized should be repeated or explained in detail and any abstract idea to be communicated must be explained in terms of the learner's experiences or by using suitable visuals or through demonstrations.
- *Feasibility and practicability*: Thus many things can be though of theoretically to make a good programme but in actual practice the designer has to think in terms of what is feasible and what is practicable under the circumstances. Many ITV programmes failed

to make their impact because the writers were not aware of the difficulties of language, mental make-up and image perception.

- *Utilizing as a visual medium*: it must not be forgotten that TV is mostly a visual medium; its importance lies in visuals, not in words only. It is not necessary to use words when a picture will do in designing the content of TV programme one should think of his/her topic in terms of telling a story in series of pictures.
- *Presenting in a humorous and high-hearted tone.* Although most of the topics cannot be presented in a humorous manner, attempts should be made by the designer to put high-heaved amusement in the programme. All programmes should not be appreciated with a heavy heart nor in a very humorous way. But they should be presented in an attractive and pleasant manner for having a better impact.
- *Pre and post telecast preparation*; it should be remembered that concern should not only be rendered for the content of the TV programme. But one should keep in mind what need to be told to the learners prior to and after the programme, so that they can be properly motivated and enlightened and many of the new concepts and ideas would be made clear and meaningful.
- *Treatment of topics:* all attempts should be made for presentation of the topic in an attractive and effective manner.

The ITV lesson content and the syllabus have interrelated functions. The syllabus is assumed to have been prepared taking in to account the learners needs. Similarly, the ITV program content is supposed to consider the instructional objective of the syllabus, which is drawn from the learners' needs. In short, in planning and designing ITV programs emphasis should be given to the attainment of the general objective stated in the syllabus.

2.5.3. Supporting Materials

Supporting materials for the TV lesson usually consists of teacher's guide and students materials. As Wittich and Schuller (1973) noted such materials describe the content of the programs outline what students are expected to do, and the materials that should be on hand when the broadcasting begins.

A teachers guide is fundamentally a professional communication that enables the teacher to make use of TV programmes harmoniously with what he has for the class. According to Gordon (1961) the TV instruction teachers' guide is expected to indicate the following major points

- The objective of the lesson should be clarified, particularly how it fits into previous lessons, further classes, and examinations.
- Brief descriptions of all experiments, demonstrations, film clips, visuals, and production devices should be given and explained in detail if they are likely to be unfamiliar to the classroom teacher.
- Suggestions for preparing the class for the TV lesson may be offered. Review of particular salient materials, background, etc may be presented-classroom teachers frequently need to be reminded not to begin teaching the content of the TV lesson itself before the program is shown, sometimes a natural tendency in preparing a class for a telelesson.
- Follow-up, procedures may be suggested, including short quizzes (to test retention), homework, project assignments, readings, and correlating activities appropriate to the lesson.
- Related background reading (for the classroom teacher) may be provided, along with various other suggested educational materials such as films, tapes, maps, charts, and devices or experiments relevant to the lesson
- All materials, which the classroom teacher may use during the TV lesson, should also be listed, and if certain diagrams, equations, or

information should appear on the classroom blackboard while the lesson is shown, they should also be noted. In some instances, the TV instructor may request the classroom teacher to cooperate in the lesson while it is telecast, a net device to stimulate attention if not overused.

- Any equipment required of students should be indicated precisely; so that the class can be thoroughly prepared by the time the TV lesson is shown.

Since the teacher shouldered the ultimate burden of realizing the entire initiative through wise use of these resources he/she should not be left alone in his challenging task. Frequent trainings for teachers are essential for enabling them to properly handle the plasma television sets and effectively conduct pre-telecast and post-telecast activities with students.

The student guide includes title of the topic, objectives, contents and exercises. The content of the TV lesson is related with students' textbook. As a result students can make preparation before the program as well as enable them carryout assignments after the broadcast.

2.6. The Classroom Teacher's Role in Satellite TV Programs Implementation

Students will not be left alone for viewing satellite TV programmes. The classroom teacher has to introduce these programmes some minutes earlier to the telecast and meet their queries or himself ask some questions to test their understanding and receptivity. Thus there must be some pre telecast and post-telecast activities to be performed by the classroom teacher with each program (Mohanty, 1984; p. 124). Program utilization, here, refers to the actual use of TV for instructional purpose in the classroom. It requires the active involvement of the classroom

teacher and students. Besides effective utilization requires more than the availability of plasma TV sets, teachers guides, teachers manuals and other facilities. It demands the awareness of the classroom teacher and his/her preparation to use ITV interactively with the textbook programs. He/she is the pivot of the entire initiative. Success of the program largely depends on the efforts, imagination, resourcefulness, sympathy and understanding of the classroom teacher. Consequently, the classroom teacher should have firm faith in the program. Classroom teachers should consider ITV programs as part of aids to his activities. In addition communication is required between the TV and the classroom teacher. The TV teachers guide plays this role. It provides outline of what is going to before, during and after the telecast. It provides information on how the classroom teacher communicates with the TV teacher to maximize student learning. The guide, in general, gives the following information for the classroom teacher (EMA, 2005).

- During pre-telecast (the first 5 minutes), the teacher is expected to make preparation for the respective lesson
  - Reading educational materials such as textbooks, syllabus, teachers guide... etc.
  - Provide useful educational inputs as required by the topic such as charts, graphs, and laboratory equipments.
  - Prepare the class for the TV lesson through introducing the topic as well as contents of the incoming TV lesson
  - Writing some important formulas, definitions... etc on the blackboard.
  - Check the plasma and order among students.
- During telecast (which covers a maximum of 30 minutes duration) the class room teacher is required to perform
  - The classroom teacher is expected to have textbook
  - Motivate students to attend the program attentively
  - Act as a role model to students by attending TV lesson attentively.

- Monitor and support students while they carryout exercises directed by the TV teacher.
- Jot down ideas that may require further explanation and discuss them after telecast.
- Assist students and cooperate with the TV teacher without interruption.
- To conduct the lesson through conventional means immediately after program interruption.

3 - After the telecast (the last 5 minutes) the classroom teacher is expected to

- Provide brief program summary
- Provide explanation about complex points noted during the telecast
- Answer questions raised by students, if any
- Give homework

2.7. Factors Affecting Implementation of Instructional Satellite TV Programs

Planning, producing and broadcasting educational satellite TV program from the center to its reception and utilization in school situation is a tremendous task. It involves program designers, producers, media experts, regional and zonal education officers, parents, teachers and students. It also requires huge amounts of material and financial resources both to start and run the program. Thus the timely availability of these resources at the respective stage of the education system determines the successful implementation of the program. In connection with, Mohanty (1984) noted that the availability of receiving sets is the first precondition for utilization of educational TV programes. For ensuring effective utilization suitable support materials like teachers guide, broadcasting timetable etc should be prepared and distributed for classroom teachers.

Teachers' training is also a concern that has enormous influence on the area of implementation. For the effectiveness of satellite TV instruction in secondary schools, teachers should have adequate and up-to-date knowledge and skill about the receiving sets including plasma TV to lead the teaching-learning process in the right direction. The classroom teacher is expected to keep the image and the sound of the set always in good condition (Miller, 1966; p. 109). This can be realized through providing short-term trainings. However, according to an assessment of instructional satellite TV programmes utilization by secondary schools in Ethiopia (EMA, 2005; p. 39) indicated that 73% classroom teachers did not get trainings on how to use broadcasting devices including plasma TV properly for teaching purpose.

More importantly to sustain the benefit of the technology in our education system the satellite TV program utilization, design etc has to integrate with the teacher education curricula. The technology should be given its rightful place in teacher educational programmes. Unless it is done, neither the teaching-learning process can be made interesting and relevant nor teachers' competence can be improved up to expectation.

It is also a fact that the educational planners and administrators at various levels in the system are at the center in the overall attempt to realize long-term as well as immediate importance of educational technology in general and instructional TV broadcasting in particular. These organs should at least have positive attitude towards the significance of the medium for teaching-learning process. Otherwise, whatever sophisticated technology is available, it will not be properly utilized and the intended educational objective will not be met.

In addition adequate cooperation and coordination among educationists, classroom teachers, evaluators, producers and planners is also essential.

Such collaborative efforts are therefore, necessary at all aspects of education broadcasting-from planning and designing to production and evaluation, in a very systematic and interdisciplinary manner.

2.8. Attitudes of Teachers and Students toward TV Instruction

The people look at educational television differs considerably depending on the degree of fulfillment of expectations. According to Sharma (2005) the attitudes of teachers toward ITV also vary. Teachers tend to be suspicious of television at the beginning, but suspicion diminishes with experience. The advantages of TV that the teachers see are equal involvement by students in all parts of the classroom (no "front-row" seats), better-planned lessons, greater use of resources, and more encouragement of students to better their study habits and use the library more extensively. In favor of this Shukla and Kumar (1977) described the significant behavior noticed in teachers about ITV in the following manner

> *The teachers are full of praise for TV, the maximum responses of almost 100 percent is for the statement, 'we have come to know many new things through TV.' A very large majority agrees that it is helpful in improving the knowledge of the rural child as well as the general improvement of the villages. Teachers did not consider it as a waste of time, or obstructive to teaching, nor did they face any disciplinary problems because of it. However, teachers were ambivalent on the issue whether TV can teach better than the teacher (p.78).*

Mohanty (1984) also indicate that most teachers who have taught on television or who have used it in their classes are apt to like it and those who have not tend to be suspicious and resistant to the media. But in case of elementary teachers; such resistance does not last as they learn to accept television as a teaching resource. He also noted that there appears to be more resistance to television teaching at the college level than at school stage. Phutela (in Mohanty 1984) also pointed out that

most teachers accepted ITV as a welcome help, for teachers too learn about better methods of teaching and subject matter, students learn more from TV given the same amount of time.

Regarding the attitudes of students toward ITV Sharma (2005) indicated that nearly three-quarters of elementary school students polled showed no dislike for televised teaching. In general they felt that more subject matter was covered, more resources and visual aids were used, and the lessons were more interesting. In connection with the attitude of college students Schramm confirmed that they were less favorably inclined, and high school students fell between the two groups. Three disadvantages were noted: difficulty in taking notes, no opportunity to raise a question at the time a points is made, and technical difficulties leading to loss of sound or picture.

Cuttack (in Mohanty 1984) reveales the fact that students are more receptive and better responsive to the educational television programmes than teachers. A study conducted by EMA (2005) to identify the attitude of students towards the newly introduced instructional satellite TV program revealed that students have a relatively better attitude than teachers towards the programme. However, the study did not indicate why such a difference exists between the attitudes of teachers and students towards the significance of the technology. It is also observed that the attitudes of students towards instructional TV decrease through time. The collection of learning data on students' attitude and aspirations of ITV experiment of Mayo et al (1975) in EL Salvador indicated that a majority of students were favorable towards ITV through out the four years (1969-72) in which attitudes were surveyed (Schramm, 1977).However, high initial enthusiasm declined somewhat as students progressed from 7th to 8th grade.

2.9. Experiences in Instructional Television in Different Countries

According to Unwin and McALeese (1988), there are far too many projects to describe about the successful uses of satellite technology for education, from Europe to South America, from Canada to Australia, from Africa to China. But here the experiences of India, South Africa, Mexico, Indonesia, U.S.A. and Britain are summarized.

Indonesian Distance Education Satellite System: connecting thirteen sites (ten universities and three department of higher education offices) for tele teaching, faculty development, administration, and research. Travel costs are down slightly while meetings and faculty productivity are up considerably (Unwin, 1988; 473).

Telesecundaria, a unique and successful TV based education program, enabled Mexico to address rural education demands. It expands to a full complement of grades 7 to 9 as students move through the program. Students attend schooling for 30 hours per week, 200 days per year-the same as the regular school system (Calderoni, in Tewodros, 2006). Each lesson consists of a 15-minute televised program, followed by a carefully guided 35 minute teacher student dialogue and a 10 minute break before the next TV lessons begins. The program is supported by rich curriculum materials. A specially designed textbook is provided for students to refer after watching a televised segment. And also, a teacher and student learning guides assisted the program.

The famous Satellite Instructional Television Experiment (SITE) of India, which was implemented during the year 1975-76, was also successful in addressing the country's educational problems. The TV programmes were related to Education, Agriculture, Health, family planning, National Integration and so on. Tele casting was made for four hours a day. Out of which one and half hour in the morning were meant for primary school

children and two and half hours in the evening for adults (Mohanty, 1984: 22-23).

The South African TeleTuks school project is another initiative that utilizes an audio and video broadcast technology to assist the formal education. The intention of the project is not to replace educators at schools, but to assist learners with quality education in the more difficult aspects of the subject matter. The South Africans' TeleTuks project is unique in that it uses an advanced bi-directional audio and video broadcast technology to make the lesson interactive. The learner can ask questions at any time during a broadcast using a microphone to which the presenter will then respond immediately (Evans, 2005: 32).

Knowledge Network of the West: Delivers televised school, college, and university programs to remote students of British Columbia, including many two-way discussions between distant students and the on-camera instructors. Cost is one-tenth of traditional campus.

2.10. Development of ITV in Ethiopia

The need to improve the quality of education through addressing the existing educational problems by using audio-visual aids necessitated the adoption of media technology into the educational system of Ethiopia (Demissew, 1991; p. 28). And as a result of the "Point Four" agreement made between the Ethiopian government and United States Agency for International Development (USAID) media technology was used to support the education system for the first time in 1963. Shortage of teaching materials and trained teachers in the system obliged the Ministry of Education to mobilize resources and exploit the opportunity of TV broadcasting for education. As a result ITV broadcasts started, for the first time in Ethiopia, in October 1965. The scopes of the programme as well as the number of beneficiary schools were limited. Only 50 schools in and surrounding the capital (Addis Ababa) were benefiting from the program.

In 1969 the program that was delivered through ITV expanded to include distance education. Since 1976-79 the ITV programs were only limited to elementary schools. And it had terminated providing ITV service in 1980 due to the absence of transmitter. After fulfilling the necessary resources, Educational Media Agency started providing ITV service as of 1986 (EMA, 2005).

The use of TV for instructional purpose had greatly supported addressing the existing educational problems prior to the adoption of the new satellite TV programs into the Ethiopian secondary school system. However, the initiative had numerous problems and limited capacity that it was inconsistent with the existing educational demand of the country.

According to EMA (2005) the system was entangled with the following major problems

- Shortage of TV program receivers in relation to large number of students
- Absence of enough broadcasting time compared with large number and types of programs
- Huge number of students at each grade level
- Broadcasting problems associated with topographic limitation of terrestrial TV transmission
- Shortage of electric power
- The absence of proper monitoring and evaluation system

Experiences of different countries have indicated that the use of ICT helps to tackle the aforementioned problems and provide quality education to all citizens irrespective of geographic location. (EMA, 2005; p.6). Having this intention as well as tackling other numerous and longstanding educational problems such as shortage of educational facilities and trained teacher, access, equity and efficiency, the new

satellite TV broadcast to secondary schools has been realized in September, 2004. Satellite TV programs are prepared in six subjects: English, Mathematics, Physics, Biology, Chemistry, and civics and Ethical Education. The content of these programs are prepared taking into account the syllabus, student textbooks and other reference materials. The number of programs delivered within the academic year for each subject and grade level is presented in the following Table.

Table 2.1: Subjects and Number of ISTV Programs Broadcast to Secondary Schools in 2004 by Grade Level

Grade	Number of programs and subjects						Total
	Biology	Chemistry	Physics	Mathe-matics	English	Civics	
9	102	102	102	170	170	102	748
10	84	84	84	140	140	84	616
11	136	136	136	186	136	102	832
12	136	136	136	136	136	102	782
Total Lesson	**458**	**458**	**458**	**632**	**582**	**390**	**2978**

The success of ITV is determined by the extent of utilization of the medium by the classroom teacher i.e. there should be communication between the TV teacher and the classroom teacher. In order to create meaningful communication between the TV teacher and the classroom teacher, teachers' guide has been prepared. The objective of the teachers' guide is to provide basic ideas for the classroom teacher on how to utilize the TV lesson effectively (EMA, 2004). The guide is prepared in such a way to provide information on the topic, objectives, and content of the daily program as well as activities to be performed by the classroom teacher before, during and after the telecast. While one period has 40 minutes durations the telecast remains on air for a maximum of 30

minutes. The total 40 minutes of a period is designed so that in the first 5 minutes (pre-telecast) the classroom teacher revise the previous lesson and introduce the topic and contents of the TV lesson and the next 30 minutes are allotted for telecast (during-transmission). Here, too, the classroom teacher has lots of tasks to perform. The last 5 minutes (post-telecast) are allotted for the classroom teacher to stabilize the lesson and provide answers to questions that are raised by students.

CHAPTER THREE

Research Design and Data Gathering Tools

3.1. Research Methodology

This study aimed at assessing the implementation of instructional satellite TV programs broadcast to secondary schools of SNNPR as well as pointing out problems encountered during receiving and implementing the programs in the classroom. To accomplish this purpose, descriptive survey method was employed. The rationale behind using this approach was that the study intended at gathering data, facts and figures that provides descriptive information on the current conditions and practices of satellite television programs, and enables identification of the existing problems in implementing instructional satellite television programs.

3.2. Sampling Techniques and the Sample

Simple random sampling technique was utilized to identify zones and "special" woreda in which sample secondary schools were located. The same technique was employed to select secondary schools and teacher respondents. Student respondents were selected making use of quota sampling technique. That is the number of students that should be selected from six sample schools was determined on a proportionate manner. Then the required number of students was selected from each school by using simple random sampling technique.

The rationale behind using simple random sampling technique was that each and every element of the population would have exactly the same probability of being selected. To this effect, Aronson and others (1990) point out that simple random sampling is one of the most important tools for ruling out the danger of systematic error in sample selection. They further suggested that this sampling technique is commonly used in a large-scale surveys for a more comprehensive investigation,

particularly when it is either difficult to compile an exhaustive list of the elements comprising the target population, or when the target group to be covered becomes too large in number.

According to the statistical information obtained from SNNPR education bureau, a total of eighty-seven governmental secondary schools were functioning making use of the Information Communication Technology (ICT) in the 2006-07 academic year. In these schools there are very large numbers of students that cannot be entirely included in the study. Therefore, as the number denoting the target group is too large, the need to use random sampling was apparently important.

Consequently, among eleven zones and five "special" woredas of the region, five zones and one "special" woreda were randomly selected. All secondary schools having grades 9-10 and 9-12 that uses instructional satellite TV programs in each of the selected zones and "special" woreda had been identified. Still employing the same technique one school had been selected from each zone and one "special" woreda.
Table 3.1 shows the name of sample secondary schools, the corresponding number of students by grade level in the year 2006-2007 and particular zone in which the sample secondary school is found.

From each school, an equal proportion of students were taken. The researcher's attempt to include equal number of students from each grade level in the sample has failed, because at the time of data collection students of grade 10 and 12 were completing classes in most of the sample schools. As a result, the number of students attending classes in these grade levels was few, and the available students were taken from the two grade levels at Dawuro, Gedeo and Keffa zones. Fortunately, adequate number of students was found at Wolaita zone. And equal number of students could be taken from each grade level.

However, having the aim of maximizing the quality of data to be collected, care has been given in selecting students. In all the sampled schools the researcher had established prior contact with school directors and identified students ranked 1-10 in each section at the end of the first half academic year. Then the required number of students had been selected among the ranked except grade 10 and 12 where already available students were included. In general, 600 students from 6 secondary schools constituted the student sample.

The objective of selecting equal number of female students with their male counterpart using stratified sampling was equally unsuccessful due to similar reasons cited above.

Table 3.1. Name of Zones, "Special" Woreda, Secondary Schools, and Number of Students Included in the Study.

No.	Zone/Special Woreda	Name of the School	Grade Level	Number of Students by Grade Level				
				Grade 9	Grade 10	Grade 11	Grade 12	**Total**
1.	Sidama	Addis Ketema	9-10	92	32	-	-	124
2.	Wolaita	Sodo C.S.S	9-12	45	45	45	45	180
3.	Dawuro	Waka S.S.S	9-12	20	10	20	15	65
4.	Gedeo	Dilla S.S.S	9-12	44	17	38	26	125
5.	Keffa	Sheta S.S.S	9-12	41	8	25	7	81
6.	Konta	Ameya S.S	9-10	13	12	-	-	25
	Total			**255**	**124**	**128**	**93**	**600**

In addition to student and teacher respondents, six school directors were interviewed. Even though, schools are the ultimate settings in which the success and failure of the program is clearly visible, the role of educational settings at different level of the system such as ZEO, WEO, REB and EMA is also enormous. Since these educational settings have their own responsibility in the overall process of implementing ISTV

program, the need to include them in the study at some degree is justified. Thus, through interviewing the researcher attempted to solicit related information from REB officials and media experts of EMA. Here the intention was to gather data in enough detail and substantiate the information obtained through questionnaires.

Thus, in the present study six types of respondents were involved. These were: students, teachers, school principals, media experts from EMA and REB officials. In the selection of REB officials and media experts due emphasis has been rendered for the responsibility they hold in the process of implementing instructional satellite TV programs.
The type and number of participants of the study are shown in the table 3.2 below.

Table 3.2. Type and Number of Participants of the Study.

Type of participant	**Number**
Media Expert	2
REB Officials	2
School Directors	6
Teachers	36
Students	600
Total	**645**

3.3. Data Collecting Tools

In this study three types of data collecting tools were utilized to obtain adequate data.

3.3.1. Questionnaire

Questionnaires were the dominant tools made use of in this study. They were used to gather data from students and teachers (i.e. two types of questionnaires were prepared: one for students and the other for subject teachers). Both types incorporated closed-ended as well as open-ended

response style items. Each item was thoroughly scrutinized as it served for the objectives of the study. The questionnaire prepared for students has three sections. Section one deal with personal data. Section two deals with students' attitude toward instructional satellite TV program. To measure students' attitude, a 5-point Likert scale was employed. Opinion statements of 10 items were utilized, with five alternative answers ranging from strongly disagree to strongly agree. Section three deals with problems associated with the availability of instructional materials, ISTV program contents and presentation. Also, factors that hinder effective implementation of satellite TV programs in the school were considered.

Likewise, the questionnaire prepared for teachers has five different sections. And it had the intention to gather data from teachers on the following major points.

- Teachers' attitude towards the newly introduced instructional satellite TV program or using the technology for teaching learning purpose.
- Obtain data on the availability of plasma TVs, plasma TV teachers guide, program receiving materials
- Information about teachers pre-service and in-service trainings especially in connection with the program
- Information about zonal and woreda education offices administrative, maintenance and supervisory support for schools in implementing the program.
- Information about teachers comment on the program organization, content as well as presentation.

3.3.2. Observation Checklists

In order to assess the actual implementation of instructional satellite TV programs by secondary schools of the region, classroom observations were made using classroom observation rating scales. One of the

classroom observations had the general objective of measuring the extent of teaching performance of subject teachers at the three phases (i.e. pre-broadcast, during transmission and post broadcast) of the plasma lesson. To do this, observation checklist having 9 items was prepared. The items were prepared taking in to account the activities suggested in teacher's guide (for instructional satellite TV programs) and training module prepared for secondary school directors and teachers (EMA, 2004). The items were presented in yes, somehow, and no categories. See appendix 3. More over, in order to assess the teaching learning physical environment classroom and schools situations were observed in terms of the presence of detracting influences, safety features for plasma TV and electrical connections and the cleanliness of the classroom. See appendix 4.

3.3.3. Interview

In order to collect data directly from media experts, regional and zonal education officials and school directors structured interview were employed. The interview guides were mainly focused on issues and concerns of the support service provided for teachers in implementing the programs, the major constraints faced while planning and implementing, the possible measures that should be taken to overcome the problems and information exchange among the user schools, EMA, and REB. All the data that have been collected using interview were used to substantiate the teachers' and students' responses.

3.4. Pilot Study

Having the intention of improvement and reduce problems that may encounter during administering the main instrument, pilot study was conducted.

Student participants of the pilot study were selected from Awassa Tabor Senior Secondary School. 60 students (42 males and 18 females) were

randomly selected from this school for pilot testing the student questionnaire. Prior to administering the questionnaire, the researcher briefly described the objective of the study as well as how they can fill the questionnaire appropriately.

Teacher respondents for the pilot study were selected from Awassa Addis Ketema Secondary School. 10 male teachers were participants of the pilot study. Based on the results of the pilot study both students' and teachers' questionnaires had been improved. Some vague items to participants were corrected. Omission and addition of some items were also made.

3.5. Method of Data Analysis

Depending on the nature of the data collected, different statistical tools and techniques have been employed. For the close-ended questionnaire items in which respondents were expected to choose among the given alternatives, the values have been first tallied within the respective category. Then after, to summarize the data obtained, simple frequency and percentages were used.

For the open-ended questionnaire items in which respondents were asked to list or comment on, a special answer codes have been prepared. The response of each individual was coded accordingly. After that the data obtained was quantified into simple frequency counts and percentages.

In the attitude measurement scale, each response had five specific categories (i.e. 5= strongly agree, 4= agree, 3= undecided, 2= disagree, and 1= strongly disagree). Thus, an individual score has been determined by the sum of the point values given for each statement. After that the scores have been categorized in to high and low using a median test.

Then the score of each respondent was compared with the median. An individual score that fall above the median is assigned the "above median" category. And those that fall below the median were assigned

the "below median" category. Through this, the data was arranged in to a two by one table followed by the computation of the chi-square statistical test to show whether there exists a significant difference or not between the above median and below median proportions, with alpha (α) 0.05 level of significance. Scores falling above the median were considered as indicating a positive attitude towards instructional satellite TV programs and vice verse.

In the attitude measurement scale of students', each student respondent was grouped by grade level into four categories. Then, an individual score was determined by the same technique employed for teachers. After that the scores were categorized in to high and low using a median test. The score of each respondent was compared to the median. Particular score that fall above the median was assigned the "above median" category. And those scores that fall below the median were assigned to the "below median" category. This was done for student respondents under each grade level. Through this, the data was arranged into a two by four table followed by the computation of the chi-square goodness-of-fit statistical test to check whether there is a significant difference or not between the above and below median proportions, with alpha (α) 0.05 level of significance.

The data collected using observation was assembled on the basis of the items (i.e. whether the item was a pre-broadcast, during or post-broadcast activity) in the observation rating form. Then the percentage of teachers who actually perform the activity fully, somehow and not at all is determined. See appendix 3.

CHAPTER FOUR

Data Presentation, Analysis and Discussion

In the present chapter the data collected through the use of questionnaires, classroom observation checklist, and interview guides are presented with the help of tables. The data presented are statistically analyzed. This is followed by interpretation and discussion of the results to address the basic questions of the study.

4.1. Characteristics of the Study Sample

Table 4.1.Characteristics of Teacher Respondents

No.	Variable	Characteristic Category	Teachers	
			Number	%
1.	Sex	M	29	80.5
		F	7	19.5
		Total	**36**	**100**
2.	Age	22-29 Years	19	52.7
		30-37 Years	6	16.7
		38 years and above	11	30.6
		Total	**36**	**100**
3.	Qualification	M.A/M.Sc	0	0
		BA/B.Sc	17	47.2
		Diploma	15	41.7
		Others	4	11.1
		Total	**36**	**100**
4.	Total Service Years In Teaching	1-5 years	7	19.4
		6 years and Above	29	80.6
		Total	**36**	**100**
5.	Service in Teaching with ISTV	1 year	10	27.8
		2 and above	26	72.2
		Total	**36**	**100**
6.	Total Teaching Load	Less than 10	1	2.7
		10-15 periods/week	2	5.6
		16-20	9	25
		21 and above	24	66.7
		Total	**36**	**100**

The above table shows that 36 teachers were directly involved in the study. They were selected from 6 secondary schools in 6 zones of SNNPR. Out of a total of 36 teacher respondents, 80.6 percent were males and 19.4 percent were females. This indicates that a good proportion of both sex groups of teachers were participants of the study. As the

qualifications of these sample teachers are concerned, 47.2 percent were BA/Sc holders, 41.7 percent were diploma holders and 11.1 percent teacher respondents were certificate graduates. From this, it is reasonable to say that nearly 52 percent of the sample teachers taught at grade levels above their qualification permit them to do so. Moreover, table 4.1 attempts to indicate the percentage composition of teachers in the sample based on years of teaching experience. Accordingly, about 19.4 percent teachers have below 5 years of teaching experience. The remaining 80.6 percent teacher respondents were above 6 years in the profession of teaching. From this it is justifiable to conclude that the majority of teacher respondents have ample experience to provide data about issues that could be raised around the profession. Especially, in connection with the main theme of this study, the majority (72.22 percent) of teachers have 2 and above years experience in teaching using plasma television.

An item in teachers' questionnaire asked them to rate the number of teaching load per week. Five alternatives ranging from below 10 up to above 26 teaching loads were given. Only 8.3 percent teachers responded as having a teaching load less than or equal to 15 periods per week. Twenty five percent teachers responded that they have 16-20 periods per week. However, nearly 66.7 percent of the teachers responded that they have a weekly teaching load of 21 and above. See table 4.1 above. From this it is possible to conclude that the majority of teachers in the sample schools have a large teaching load, which may affect their teaching performance. Pertaining to large teaching load the problem is found to be serious in affecting the implementation of instructional satellite TV programs in those secondary schools that are found relatively in rural areas. To cite, during conducting classroom observation in Waka senior secondary school, the researcher noticed as one English teacher attempting to manage two nearby classrooms simultaneously owing to

shortage of teachers in the subject area within the school. The interview results with directors of Waka senior and Ameya secondary schools indicated that they persistently informed the problem for WEO and ZEO. However, regardless of this the problem remained to exist and it is currently affecting the schools overall attempt of implementing the program. In relation to the shortage of teachers in Waka senior and Ameya secondary schools ZEO explained as they annually fulfill the teacher demands of these schools, but many teachers leave the workforce and leave the area in the academic year.

Table. 4.2. Characteristics of Student Respondents

No.	Variable	Characteristic Category	Students	
			Number	%
1.	Sex	M	398	66.3
		F	202	33.7
		Total	**600**	**100**
2.	Age	14-16 years	215	35.8
		>16 years	385	64.2
		Total	**600**	**100**
3.	Grade	9	255	42.5
		10	124	20.7
		11	128	21.3
		12	93	15.5
		Total	**600**	**100**

Table 4.2 indicates that 600 students were directly involved in the present study. They were selected from 6 secondary schools that are found in 6 zones of SNNPR. The student respondent group comprises of 66.3 percent males and 33.7 percent females. This is indicative that the study sample takes in to account both sex groups.

4.2. Availability of Instructional Resources in Schools

It was tried to observe the availability of instructional resources such as plasma TVs, plasma TV teachers and students guides in each of the sample schools. See table 4.3 below for the summary result of the observation.

Table 4.3. Availability of Instructional Resources in Schools

No.	School Name	Types of Instructional Resource			TV/Section
		Plasma TV (in number)	CD Teacher's Guide	Students Guide	
1.	Addis Ketema S.S	19	6	6	0.5
2.	Wolaita Sodo C.S.S	37	6	6	0.7
3.	Konta S.S	4	6	6	0.4
4.	Sheta S.S.S	18	6	6	0.7
5.	Waka S.S.S	17	6	6	0.6
6.	Dilla S.S.S	27	6	6	0.4
Average		20.3	6	6	0.55

The average plasma TV to section ratio in the sample schools was found to be 0.55. And the entire schools were observed functioning on a two-shift system. Relying on this information it is rational to say that the sample schools are working equipped with adequate number of Plasma TVs. In contrary, the data related to plasma TV teacher's guide indicate that each school has only six CD teacher's guide–one for each of the six subjects. The same is true about the availability of student's guide.

In addition to acquiring information about the availability of instructional resources through direct observation, teachers and students were asked

by means of questionnaires to say whether or not Plasma TV teachers' guides are available to them on the present cycle of ISTV programs. The item had two alternatives/answers-adequate and inadequate. A summary result of teacher and student respondents is presented in table 4.4.

Table 4.4. Availability of Instructional Supporting Materials

Resource Availability	Types of Instructional Resource	
	Plasma TV Teachers' Guides	Plasma TV Students' guides
Adequate	16.7%	37.5%
Inadequate	83.3%	62.5%
Total	**100%**	**100%**

As shown in the above table, 16.7 percent teachers respond that Plasma TV teachers guide is adequately available in their school. On the other hand, 83.3 percent teacher respondents said that the availability of Plasma TV teachers' guides in their schools is inadequate. During observation, it has also been witnessed that the TV guides are not available to almost all teachers. Despite what has just been found through this study, the teacher's guide is believed as indispensable and mandatory for the classroom teacher so as to utilize the TV programs harmoniously and effectively. Based on this finding, it is unarguable to conclude that Plasma TV lesson teacher's guide is in short supply. According to teacher respondents this inadequacy is one of the major problems that hinders the smooth implementation of the program.

Furthermore, school directors were interviewed about the action they took to alleviate the shortage of plasma TV teachers' guides in their respective schools. The principals of the entire six sample secondary schools explained that they have the TV lesson teacher's guide for each of

the six subjects in the form of soft copy (in CD). And they indicated that it has been impossible to print and distribute for teachers because of shortage of financial resources. Similarly, REB officials and media men from EMA were interviewed about the action that they have so far taken to solve the problem. They have indicated that the idea of printing the teachers' guides and distributing for each school has been found cost ineffective. Instead, EMA has currently devised a mechanism of digitalizing the programs in secondary schools, which will be functional in the coming academic year.

Those teachers who responded that plasma TV teacher's guide is inadequate were asked how they conduct the teaching task in the absence of teachers guide. About 91.67 percent teachers said that the shortage of TV lesson teachers' guide obliged most of the classroom teachers join classes without having complete picture of the incoming lessons. As a result, their classroom activity could be affected.

Similarly table 4.4 above indicates that 37.5 percent student respondents said that there exist adequate quantities of student guides in their school. While 62.5 percent student respondents said that the provision of student guides is inadequate. Thus, it is possible to conclude that there is also lack of student guides in the sample secondary school. In contrary to the findings indicated so far regarding the availability of student guide in the sample schools, the classroom observations results showed that no single student was observed having the material during the teaching learning process, and they told the researcher that they do not knew the idea at all. In addition, the interview result with 6 school directors about the availability of student guides in their schools showed that every school has a student guide in each subject in the form of soft copy (in CD). However, they are unable to print and distribute it to students, for it incurs considerable cost that schools cannot afford.

4.3. Teacher's Role and Involvement

An item in a questionnaire asked teachers about their participation in teacher training programs. For those who said that they have participated, another question was followed to know whether they took courses on implementing instructional satellite TV programs. The summary results for both items are presented in Table 4.4 followed by description.

Table 4.5. Teachers Training

Teachers Responses	Participation in teacher training		Took courses on implementation of ITV programs	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Yes	36	100	4	11.1
No	0	0	32	88.9
Total	**100**	**100**	**36**	**100**

The above table clearly demonstrates that all teachers have taken teacher-training programs before engaging in the teaching task. Among them only 11.1 percent teachers took courses on ITV program implementation. The remaining 88.9 percent teachers did not take a course that deals with managing plasma TV lesson classes. This is an indication that there is lack of integration between the newly introduced teaching learning technology and teacher training programs. The classroom teacher is required to have up to date information about the new instructional technology. This can be realized either through providing regular courses during recruiting and training teachers at the very outset or arranging short term in-service trainings that should be applicable in a national scale.

The mere introduction of a certain technology without designing strategies that could sustain the benefits would remain to be a futile

exercise. One way of guaranteeing the continuation of the benefits of this technology is through maximizing the active participation of stakeholders starting from the stage of conception to implementation as well as evaluation of programs. To what extent did teachers, who stood in front of students with the technology, participate in or consulted indirectly by program designers or decision makers before handing over the technology for use really determine its success. In addition, monitoring how really the classroom teacher is utilizing the technology for teaching and thereby identifying weaknesses and building his capacity are prime tasks that should not be overlooked.

In line with this teachers were asked about their involvement in the process of developing ITV programs. The item contained two alternatives/ answers-'involved' and 'not involved'. Table 4.6 summarizes the results.

Table 4.6. Involvement of Teachers During Instructional TV Programs Development

Categories	Frequency	Percentage
Involved	6	16.7%
Not Involved	30	83.3%
Total	**36**	**100**

The above table clearly illustrate that only 16.7 percent teachers have got the opportunity to involve during instructional TV programs development. On the other hand, an overwhelming majority of (83.3 percent) teachers in the sample schools didn't take part in the stage of development in one way or the other.

The interview results of school directors about the extent of teachers' involvement during the stage of ITV programs development showed that no teacher or school director has ever got the chance to do so.

An item in a questionnaire asked teachers how often they have participated in the in-service ISTV programs utilization trainings since the program started. The item was provided with five options ranging never to more than three times. The result obtained is summarized in the table below.

Table 4.7 Participation of Teachers in Short-term In-Service Training.

Participated	**Frequency**	**Percentage**
Never	32	88.9
Once	4	11.1
Twice	0	0
Three Times	0	0
More Than Three Times	0	0
Total	**36**	**100**

The above table clearly demonstrates that only 11.11 percent teachers have been participated only once in the short-term in-service ISTV program utilization training. The remaining large majority (88.89 percent) of teacher respondents said that they have never taken part in the short-term in-service ISTV program utilization trainings. From this data, it is possible to conclude the fact that the majority of teachers in the sampled schools lack short-term in-service trainings about handling and utilizing satellite TV program receiving materials. In addition, the interview result with school directors indicated that teachers did not get prior training or proper orientation on how to properly use the technology as well as ISTV programs during the teaching learning process.

With regard to teachers' involvement in in-service training, 6 directors of the respective sampled schools and one official from EMA were interviewed. The results indicate that EMA has trained three individuals (the director and two subject teachers who were supposed to serve as an ICT focal persons in the locality) as trainers of trainee (TOT) from each

secondary school before the beginning of the program in 2004. The training provided by EMA had the intention that teachers trained would arrange trainings in their respective schools when they return there. However, that would not be realized as intended by EMA. School directors pointed out that they did not have the resources to carry out such trainings or orientations.

4.4. Factors That Cause Failure in ISTV Program Transmission

An item on teachers' questionnaire asked to rate the extent of occurrence of satellite TV program transmission failure in their schools. The item was presented in a five-point scale ranging from never to always. For those schools that have ever experienced failure of program transmission teacher respondents were asked to list the usual causes for the incident in order of severity. Similarly, students were also asked to rate the same questions. The result of both types of respondents is summarized in the table below.

Table 4.8. Extent of ISTV Program Transmission Failures.

Extent of Plasma TV program transmission failure	Teacher Respondents		Student Respondents	
	Frequency	Percentage	Frequency	Percentage
Always	0	0%	35	5.8%
Occasionally	6	16.7%	77	12.8%
Uncertain	2	5.6%	50	8.3%
Sometimes	28	77.8%	396	66%
Never	0	0%	42	7%
Total	**36**	**100%**	**600**	**100%**

Table 4.8 pointed out that sampled schools have faced satellite TV program transmission failures in varying degrees ever since it started in September 2004. Accordingly, 16.7 percent teacher respondents said

that there had been occasional satellite TV program transmission failures in their school, 5.6 percent teacher respondents said they are not certain, and 77.8 percent teacher respondents said that the extent of transmission failure in their school is categorized under 'sometimes'. However, no teacher respondent has selected the option 'always' or 'never'. From this it is understandable that due to different reasons there had been failures of satellite TV program transmissions in the sampled schools.

In relation to the causes of program transmission failure in their respective schools, teacher respondents listed different factors in terms of severity. In general 52.8 percent teacher respondents described that unexpected interruption of electric power as the main cause for program transmission failure, 33.3 percent teachers said technical problems, 8.3 percent teachers described that tests and examinations are the main causes for the incident observed in the schools. Here two teacher respondents did not answer the item at all. As the second major cause 47.2 percent teacher respondents described that technical problems accounts for transmission failure. 22.2 percent teacher respondents said power interruption and 13.89 percent teacher respondents said teachers occasional meeting as a cause. And in terms of severity as a cause for transmission failure, teachers meetings and local gathering by 38.9, and tests and examinations by 27.8 percent teacher respondents ranked at the third position.

In connection with this the researcher further attempted to look the causes of transmission failures and as a result absence of plasma classes through classifying the schools in to two categories-those that use only generators as a source of electricity and others that get power from EEPCo as well as generators. This is because in the two schools where generators are the only source of electric power almost all the teacher respondents said shortage of fuel for generators as a major cause for

transmission failure. However, in the other schools technical problems take the leading position in influencing the smooth transmission of programs.

The following are factors that are described as causes for satellite TV program transmission failure by teacher respondents and the researcher categorized them as technical problems.

- Burning of amplifier
- Failure of particular program channel and mixing up of channels
- Transmission failure from the source (EMA)-very poor sound quality, delay and absence of transmissions from the source.
- Shifting position of VSAT dish
- Problems related with the generator and electrical installation in the school compound

Table 4.8 also indicated that 5.8 and 12.8 percent student respondents said that there were "always" and "occasional" transmission failures in their schools respectively. On the other hand, 8.3 percent and 7 percent students replied as 'uncertain' and 'never'. But, 66 percent students responded, as there were transmission failures "sometimes". This is in agreement with the result of teacher respondents.

Similarly students were requested to list those factors that were responsible (causes) for transmission failure in their school in order of severity. Here also the researcher treated students' response by categorizing the schools based on the nature of source of electricity for the same reason described above. In Awassa, Sodo, Dilla and Bonga secondary schools students said that technical problems mainly account for program transmission failure. Secondly they have put tests and mid examinations, and lastly unplanned teachers gatherings that clash with program transmission. Differently, in Waka and Ameya secondary school students described the shortage of fuel for generators as the major cause for complete absence of transmission sometimes. Then technical

problems were considered as the second most recurring cause for absence of transmission in their school. And thirdly it was teachers unplanned meetings. Here most students explained that during teachers' meetings they were usually obliged to attend plasma lessons alone. Other problems like the shortage of plasma TV remote controls, the delay of teachers; local holidays, students' gatherings, and absence of TV locker key were mentioned as causes for transmission failure. Further more, students explained that schools do not have skilled technicians who maintain plasma TVs during technical failures.

Teachers were also asked through a questionnaire whether or not large class size affects their activities in the classroom during implementing satellite TV programs. See table 4.9 for the summary result of teacher responses.

Table 4.9 Impact of Class Size on ISTV Program Implementation.

Created instructional problems	Teacher Respondents	
	Frequency	Percentage
Yes	34	94.4%
No	2	5.6%
Total	**36**	**100%**

As shown in the above table, 94.4 percent teachers responded that large class size influenced their activity in the classroom in various ways and degree. However, only 5.6 percent teachers responded as class size have no impact on their classroom activities. Based on this finding it is possible to conveniently conclude that large class size is a problem to most teachers as it restricted the type as well as scope of their classroom activity. It hindered teachers not to comfortably support students as per the demand of the TV teacher.

In this regard teachers were asked to describe those instructional problems that large class size created on their classroom activity in order of severity. Instructional problems that most teachers considered sever are presented below in order (from most to least sever).

As a result of large class size:

- 63.9 percent of teachers described, as they were unable to move about and assist every student in accordance with the TV teacher
- 38.9 percent of teachers said that it is almost impossible to follow up every student and check exercise book for notes, class works and home works.
- 50 percent of teachers also pointed out that it is difficult to allow every student have active involvement in the class relatively with the traditional teaching method. This was particularly serious during language classes in which students were required to form small groups (i.e. group discussion is often impossible) and exhibit active participation.

Besides, teacher respondents in relation to large class size also cited a number of other instructional problems. These were:

- Since sometimes the volume of the TV decreases from the source of transmission (i.e. from EMA) students sitting at the back of the class face difficulty to attend the lesson properly
- It is also difficult to control every student's action and make the class safe for teaching learning.

4.5. The Classroom's Physical Setting

Having the intention of assessing the physical environment of the teaching learning process, observations of the classroom and school situation was made. The observation was made with a three point scale. See appendix 4. The result of the observation is summarized in the table below.

Table. 4.10. The Classroom's Physical Setting.

No	Physical Settings Consideration	Satisfactory	Average	Not Satisfactory	Total
1.	Safety features for plasma TV and electrical connections	95%	5%	-	100%
2.	Roof situations and the presence of Ceilings	-	18%	82%	100%
3.	The cleanliness of the classrooms	56%	13.4%	30.6%	100%
4.	Detracting influences	80%	20%	-	100%

The above table shows that almost all plasma TVs (95%) in the sample schools are well protected from students reach and the threat of physical damage by a metal box which can be locked. In a similar way, all electrical connections in the classrooms of these schools are observed properly and safely installed. In contrary, the overwhelming majority (82%) of classroom roofs are made of corrugated iron sheets. Directors of the respective sample secondary schools explained that the corrugated iron roof coupled with absence of ceilings make the TV lesson hardly heard during rainy season. Since most of the sample schools are found far from a motorway the occurrence of detracting conditions such as excessive dust and motor sound is minimal. And, most classrooms (56%) of the sample schools were observed satisfactorily clean. From the above findings it is reasonable to conclude that schools physical environment is satisfactory for implementing ISTV programs.

4.6. Teachers and ZEO and WEO Experts Support to Schools

Teachers were asked through a questionnaire whether they provide assistance to their students during program transmission. The item contained three alternative answers (i.e. yes fully, yes partially, and not at all). Table 4.11 shows the summary results of teacher respondents

Table.4.11 Extent of Teachers' Support to Students

Teacher Responses	Frequency	Percentage
Yes fully	13	36.1%
Yes partially	19	52.8%
Not at all	4	11.1%
Total	**36**	**100%**

The above table indicates that only 36.1 percent teachers help their students fully as instructed by the plasma TV teacher. However, 52.8 percent teachers said that they provide only partial support, and 11.1 percent teachers respond, as they do not provide any support at all. This implies that the majority of classroom teachers are not providing full support for their students during ITV program transmission. Here those teachers who said I support partially, and not at all were further asked to describe the reasons that inhibit them assist fully. All the 100 percent teacher respondents have one problem in common in connection with the aforementioned point. They do not have sufficient time to provide adequate support to their students in conformity with the Plasma TV teacher. Owing to inadequacy of time allotment by the plasma TV teacher, most of the time the classroom teachers are obliged to terminate providing explanation. So, they fail to assist fully as they can. In other words, according to all teacher respondents, it is possible to conclude

that the nature of instruction by the Plasma TV teacher and the time allotted for it is usually incompatible.

In order to assess the extent of subject teachers' classroom activities and the associated support they provide to students during program transmission, students were asked to respond to a set of questions as described in table 4.12 below. The items were presented with the following two alternatives- Yes and No. Table 4.12 shows the summary result of student respondents regarding the subject teachers' classroom activities during the broadcast.

Table 4.12. Activities of the Classroom Teacher During the Broadcast

No.	Teachers' Activity	Student respondents		Total
		Yes	No	
1.	During ISTV program transmission failure the classroom teacher teach using conventional method	69.5%	30.5%	100%
2.	Conduct pre telecast activities	27.3%	72.7%	100%
3.	Appropriately assist students during program transmission harmoniously with the program	58%	42%	100%
4.	Carry out post program transmission activities properly (i.e. provide lesson summary)	67.2%	32.8%	100%
5.	Conduct make up and tutorial sessions out of the regular plasma TV lesson	42.3%	57.7%	100%

As can be seen from the above table that only 30.5 percent student respondents said that the classroom teacher does not handle the class and teach using chalk and talk method when program transmission fails.

In contrary to this, the majority (69.5 percent) of students in the sample confirm as the teaching task is safely carried out by the classroom teacher in cases of program transmission failures due to different reasons. It is with the activities of teachers before the broadcast that a great majority of students (72.7 percent) have said "NO". This means that teachers do not usually conduct pre broadcast discussions. In relation to the assistance that the subject teachers provide during transmission the majority of (58 percent) student respondents pointed out as teachers provide the required assistance in harmony with the TV teacher. The same is true with teacher activities after the broadcast. What seems a problem in relation to the subject teachers' responsibility according to the findings in the above table is that the majority of teachers in the sample schools do not arrange and conduct additional learning opportunities for students like tutorial and make up sessions that reinforce the regular plasma lesson.

The mere existence of sophisticated technological device in the classroom create no difference on students learning if the classroom teacher lacks the right knowledge, skill and motivation to organize and manage the learning experience. So the classroom teacher has the major role in the overall attempt of utilizing the technology for creating a better teaching learning environment in secondary schools. Therefore, assessing what teachers are really doing in the classroom during instructional satellite TV broadcast helps to identify the major problems in the entire program and enables to take corrective measures.

Having this intention, this study attempted to assess subject teachers classroom activity during instructional satellite TV program transmission through the use of observation checklist. The intention here was to measure the extent of teaching performance at the three phases of the program. The observation checklist did contain nine items that were classified in to three categories as activities before, during and after the

broadcast. The items were prepared taking in to account the activities of the subject teacher described in the teacher's guide and training modules prepared by EMA.

Accordingly, activities before the broadcast include those instructional considerations such as having educational inputs required by the program, check students' attendance, and conduct pre broadcast discussions. Activities during the broadcast include those instructional considerations such as: monitor class discipline, motivate and encourage students to actively participate in the program, assist and follow up students to carry out tasks instructed by the ISTV program, and the absence of program interruption. (i.e. extent of communication between the classroom teacher and program transmission). Activities after the broadcast include summarizing the lesson, provide feedback for questions, and introduce the topic and contents of the next program.

Twenty-four teachers in three of the sampled schools were selected and each teacher was observed for only one broadcast session in which a total of 24 observations were made. These observations were carried out in three weeks duration on programs 25, 26 and 27 of all grade levels. The observations were carried out in Waka S.S.S. on 8 teachers (i.e. two from each grade level), Sodo Comprehensive S.S on 8 teachers (i.e. two from each grade level) and in Addis Ketema Secondary School on 8 teachers (i.e. four teachers from grade 9 and four teachers from grade 10). After completing observation of each instructional consideration, the summed result for each teaching activity were added together and averaged to give the results presented in table 4.13.

Table 4.13. Extent of Teaching Performance of Subject Teachers

Extent of teaching performance	Types of Teaching Behavior		
	Activities before the broadcast	Activities during the broadcast	Activities after the broadcast
High	21.2%	58.3%	58.3%
Satisfactory	30.5%	19.4%	8.3%
Low	48.3%	22.2%	33.3%
Total	**100%**	**100%**	**100%**

The above table indicates that the great majority of teachers "highly" perform activities during and after the broadcast. This accounts for 58.3 percent of teachers who were observed highly carrying out activities on both phases of the broadcast. About 19.4 percent of teachers were rarely observed carrying out activities during the broadcast. And 22.2 percent of teachers' performance was "low" at this phase of the broadcast. Similarly, 8.3 percent of teachers were observed satisfactorily carrying out activities after the broadcast. And 33.3 percent of teachers' performance after the broadcast was observed as "low". The latter is a large proportion. That is because almost all teachers were not observed providing introduction pertaining to the topic and contents of the next program.

However, most of them were seen summarizing the lesson and providing feedback for those questions forwarded by students after the broadcast. In addition the above table indicates that 21.1 percent of teachers were observed carrying out tasks before the broadcast, 30.5 percent as "satisfactory" and 48.3 percent teachers extent of pre-broadcast activity is categorized under "low". This finding is nearly in agreement with the result obtained from students' responses about the pre broadcast activity of the classroom teacher. This implies that a gap is observed in the teacher's series of activities just before transmission begins. The reason

that most teachers provide for the observed problem was the shortage of time. The time gap between the end of transmission and its start is only 10 minutes. 5 minutes after transmission is allotted for post broadcast activities. It is the remaining 5 minutes that are given for the teacher to exchange classrooms and carry out pre-broadcast activities.

In implementing satellite TV education project EMA, REB, Zonal and Woreda education offices have their own duties and responsibilities. According to EMA (2005), Zonal and Woreda education offices have the responsibility to check the availability of various forms of resources in schools, monitor the implementation of the project and identify and timely solve problems observed during utilization hand in hand with teachers and the school administration. The same with the REB.

Having this in mind teachers were asked through questionnaire to measure the extent of support they get from Zonal and Woreda education officials to the overall implementation of ISTV programs. The item was presented in a three-point scale: low, medium and high. Table 4.14 shows the summary results of teacher respondents.

Table.4.14 Overall ZEO and WEO Administrative and Maintenance Support for Schools.

Categories	Frequency	Percentage
Low	23	63.9
Medium	9	25
High	4	11.1
Total	**36**	**100**

Table 4.14 above shows that in the sample schools, 63.9 percent teacher respondents said that the extent of support is low, and 25 percent and 11.1 percent rated medium and high respectively. From this it is possible to conclude that the extent of support that Zonal and Woreda offices

provide for schools in implementing instructional satellite TV programs is low. Having the intention to obtain data about the extent of overall support that school get from Zonal and Woreda educational settings, school directors were interviewed. Virtually, all the directors explained as the cooperation and support was low. Especially, the directors of Waka and Ameya secondary schools, which obtain electricity from generators erected in the school compound, explained that they did not timely get fuel and other materials.

4.7. Appropriateness of the Program Organization and Presentation

Teachers were asked to express their feelings about statements that deal with the appropriateness of program organization and presentation. Specifically the statements deal with the presence of adequate graphics, photographs, and diagrams in the programs, the adequacy of time given for students to take notes and carry out exercises during the lesson, the presence, clarity and duration on air of laboratory type demonstrations particularly in natural science subjects and the extent of relationship between student's text book and the contents of the TV lesson. These same questions were also presented for student respondents. Depending on the type of the questions the items were presented having different response styles. The table in appendix 9 shows the summary result of teacher and student respondents.

As it is indicated in the table of appendix 9, about 4.15, 58.3 and 41.7 percent teachers said that each plasma lesson incorporates adequate and less adequate graphics, diagrams and photographs respectively. In much the same manner, 65.8 and 4.7 percent student respondents described as the TV lessons contain adequate and less adequate graphics, diagrams and photographs respectively. Based on these findings it is rational to conclude that adequate visuals and diagrams

support instructional satellite TV programs. Pertaining to the presence of adequate laboratory type demonstrations in natural science subjects, 77.8 percent teachers said that it is adequate. Very few teachers about 16.7 and 5.6 percents said it is less adequate and inadequate respectively. And also a great majority (52.8 percent) of teacher respondents agreed upon the simplicity and presentation clarity of demonstrations. However, only 30.6 and 16.7 percent teachers said that the clarity is less adequate and inadequate respectively. The response of teachers for the adequacy of demonstrations duration on air is almost the same with the finding above. In relation to the consistency that the program has when moving from one lesson to the next, the overwhelming majority (69.4 percent) of teacher respondents said, "adequate", 25 and 5.6 percent said that it is "less adequate" and "inadequate" respectively.

Similarly, the majority (52.8 percent) of teacher respondents agreed upon the relatedness of the content of the TV lesson, students' textbook and teacher's guide. In contrary to these teachers pointed out that the time given for students to solve exercises during the lesson is inadequate. In addition they were asked to comment on the average speed of daily program presentation. The majority (75 percent) of teachers said that it is faster.

4.8. Students' Attitude Towards Instructional Satellite TV Programs

Students were asked through questionnaire to rate statements that are intended to measure the extent of opinion towards instructional satellite TV program. The Likert scale was adopted to prepare the rating scale. Opinion statements of 10 items were employed with five alternative answers ranging from strongly disagree to strongly agree.

A student's score is determined by the sum of the point values given for each 10 statement. The attitude score of students is classified by grade

level. A median value is calculated for the attitude scores in each grade level. The score of each student is compared with the median. The attitude score, which is greater than the median, is assigned to the "above median" category. On the other hand, a score less than the median is assigned the "below median" category.

Through this, the data is arranged into a two by four table followed by the computation of the chi-square goodness-of-fit statistical test to check whether there is a significant difference or not between the above median and below median proportions, with alpha (α) 0.05 level of significance. Scores that are equal to the median are not incorporated in the statistical test. Then the chi-square value is calculated for the attitude scores in the two categories as presented in table 4.16.

This value is utilized to test:

> The null hypothesis (H_0): there is no significant difference between the observed attitude score distribution and the expected attitude score distribution of students at 0.05 level of significance and one degree of freedom.

The expected attitude score distribution of students is the case in which the number of the above median score frequency is equal to the below median category. In other words, the null hypothesis can be stated as: students have a neutral attitude towards plasma TV education.

Table 4.15. Attitude Scores Above and Below the Median of Students by Grade Level

Category	Student Respondents							
	Grade-9		Grade-10		Grade-11		Grade-12	
	f_o	f_e	f_o	f_e	f_o	f_e	f_o	f_e
Above Median	118	119	56	57	56	55.5	41	42.5
Below Median	120	119	58	57	55	55.5	44	42.5
Total	**238**	**238**	**114**	**114**	**111**	**111**	**85**	**85**

χ^2=**0.167**

As shown in table 4.16, the computed chi-square value at 0.05 alpha value and one degree of freedom is 0.167. The expected chi-square value in a chi square table at 0.05 level of significance is equal to 3.841. Since the computed chi-square value is less than the expected value the null hypothesis is retained. That is students have a neutral attitude towards instructional satellite TV programs (education).

4.9. Teachers' Attitude Towards Instructional Satellite TV Programs

Teachers were asked to rate statements that are designed to measure the extent of opinion towards instructional satellite TV programs. The rating scale was constructed in the form of Likert scale. Teachers had five alternatives to select ranging from strongly disagree up to strongly agree. Opinion statements of ten items were utilized to measure the attitude of teachers. See table 4.17 for the summary result of the teachers' responses.

Table 4.16. Attitude Scores Above and Below the Median of Teachers

Category	Teachers respondents			
	Frequency observed (f_o)	Percentage Of Frequency observed (f_o)	Frequency expected (f_e)	Percentage Of Frequency expected (f_e)
Above Median	30	83.33%	18	50%
Below Median	6	16.67%	18	50%
Total	36	100%	36	100%
		$\chi^2 = 16$		

In a chi-square (χ^2) table, the expected χ^2 values at one degree of freedom and at 0.05 level of significance is 3.841. Since the computed χ^2 value (i.e. 16) is greater than the expected value at 0.05 level of significance, the difference is statistically significant. This chi-square value is large enough that it indicates as the two distributions differ significantly. Hence the null hypothesis can be rejected and it is possible to say that teachers have a strongly positive attitude towards instructional satellite TV programs.

CHAPTER FIVE

Summary, Conclusions and Recommendations

5.1. Summary

ICT supports education in different ways. Since it is a convenient channel of communication, it reinforces the relationship among teachers and students, students and students, teachers and teachers in the same or different schools. It also enables easy access to information, to demonstrate different scientific experiments through the use of models. It is also indispensable to teaching learning process, for it enhances motivation, understanding and memorization during learning. The technology would have paramount importance especially when the system has been entangled with shortage of skilled teachers, inadequate libraries and laboratories.

Taking the aforementioned points in to account, Ethiopia has currently been using the technology for formal education at secondary school level. Although deciding to use the technology to tackle the observed problems and attempting to bring a difference in the sector is highly encouraging, the area of implementation is not an easy task. It requires extremely skillful and willing classroom teachers, collective efforts of all stakeholders in the business, availability of instructional resources and others.

Finding out the problems encountered during implementation and suggesting improvements for achieving the intended purpose through using the technology has felt essential to conduct this research. More explicitly, the present study was undertaken for the following specific purposes: to find out the existing problems and suggest improvements so as to make implementation of instructional satellite TV programs effective and relevant. It also tried to assess the attitudes of teachers and students towards ISTV programs and the extent to which the classroom's

physical setting is conducive for effective implementation of the program. More over, the study had the intention of assessing the appropriateness of program organization and presentation.

The study employed survey research methodology. Three types of data collecting tools were utilized, namely questionnaire, observation and interview. In the selection of zones woredas, and schools a random sampling technique was utilized. Thus among eleven zones and five "special" woredas of the region, five zones and one "special" woreda were randomly selected. Similarly, one woreda was randomly selected from each zone. As a result, the sample constituted five zones and one Special woreda. Employing the same technique, one school was selected from each woreda, and a total of six schools made up the sample. From these schools a total of six-hundred students were selected through quota sampling technique and participated to fill in the students' questionnaire. Besides, a total of thirty-six teachers, six from each school, were also participants of this study. Classroom observations were also made on twenty-four teachers, eight from three schools, in which case one observation was conducted for each teacher. In addition, six school directors, two regional education bureau officials as well as two media experts from EMA were interviewed. The data collected were statistically analyzed through applying frequency counts, percentages, averages, median, and chi-square test. Then it is presented in a tabular form for easing interpretation and discussion.

The results of the questionnaire administered to students indicated that students have neutral attitude towards instructional satellite TV broadcast. Moreover, it is found that the overall teaching learning process is being constrained by lack of students' guides, inadequate number of qualified teachers for the respective grade levels, and the absence of programs broadcast. According to the result obtained from

students' responses, the major causes (problems) for program interruption were: technical failures (on the part of plasma TV sets and other program receiving materials, generators or electrical installation in the school compound), tests and mid-examinations, unplanned (that clash with the broadcast schedule) teachers meetings, and lack of fuel for generators. Furthermore, students pointed out that overcrowded classes and noise as additional constraints for instructional satellite TV programs implementation in the classroom. Other problems like the shortage of plasma TV remote controls, the delay of teachers; local holidays, students' gatherings, and absence of TV locker key were mentioned as causes for transmission failure.

The study also showed that teachers handle and teach making use of conventional method during the failure of program transmission. In relation to teachers' classroom activities during the three stages (i.e. pre-, during, and post-) of broadcast, the result made clear that the majority of teachers conduct activities during and after the broadcast. In contrast to this, however, the majority of them overlooked pre broadcast activities. On top of this, it is possible to understand from the result of students' questionnaire that most students have found the programs incorporating adequate graphics and photographs, laboratory type demonstrations that are clearly presented and stays on air for sufficient time. However, the programs are presented in a speedy manner that they often fail to catch up with the pace. Moreover, the time allotted for students to take notes from the screen and carry out classroom exercises are inadequate.

The information obtained from teachers indicated that the majority of subject teachers have a strongly positive attitude towards instructional satellite TV programs. It is also pointed out that effective program implementation is being constrained by lack of teachers guides, large class size, absence of well qualified technician, inadequate number of

teachers and absence of broadcast. Broadcast failure often resulted from technical problems, lack of fuel, tests and examinations as well as unplanned teachers' meetings.

Here, teachers also pointed out that lack of knowledge and skill about operating program receiving materials and utilizing the programs effectively for teaching learning due to absence of training or proper orientation created unfavorable grounds for implementation. It is indicated that the majority of teachers did not take pre service and in service short term trainings about the utilization of satellite TV programs in the classroom. They have also pointed out that no teacher has ever got the chance to participate in instructional development. Besides, teachers indicated that the majority of classroom teachers were not providing full support for students as intended during ITV program transmission. Because the time allotted for the classroom teacher was inadequate. They have also described that the extent of support that zonal and woreda education offices provide for schools were low.

Pertaining to the appropriateness of program contents and presentation, most teachers have found programs containing adequate graphics and photographs, laboratory type demonstrations that are clearly presented, and remains on air for adequate time. Likewise, they indicated that program presentation maintained consistency when moving from one lesson to the next. Teachers also confirmed that there was a high degree of relatedness among the contents of the TV lesson, teacher's guide, and student's textbook. On the other hand, they indicated that the daily programs were presented in a speedy way. As a result students usually fail to attend properly. In addition, the time given for students to take notes and carry out exercises during the broadcast was inadequate.

The classroom observation result also indicated that the majority of subject teachers conduct classroom activities during and after the broadcast. However, this does not mean that there were not some weaknesses on the part of classroom teachers. Rather, almost all teachers did not introduce the topic and contents of the next day's lesson. In addition, the majority of subject teachers were observed interrupting the TV broadcast (simultaneously conducting discussion). Unlike what had been observed during and after program transmission, most teachers did not conduct the majority of pre-broadcast activities. Especially, the pre- broadcast discussion was overlooked. The rationale that they provided in connection with this point was the inadequacy of time gap between the end of one program and the start of the other.

The result of the interview with directors of the entire six sample secondary schools also indicated that zonal and woreda education offices usually reserve or lack cooperation with schools to resolve problems pertinent to instructional satellite TV programs. For instance, when schools consult these settings on the provision of tests and mid exams, they provided working in weekends as a solution. However, they leave the responsibility to schools to persuade teachers to work on these days without incentives or extra payment. This is difficult or almost impossible for schools to realize based on the existing realities without the goodwill and financial cooperation of regional or zonal government.

The result of the interview with directors of the entire six sample secondary schools also showed that schools have faced serious challenges to conduct continuous assessments such as conducting tests and mid-semester examinations. This is because they do not know the annual broadcast schedule (i.e. when does the broadcast exist or be absent during the academic year is not clearly known by schools). And the broadcast does not stop unless during semesters break for final

examinations. As a result, they are obliged to shut down the broadcast and give tests and mid exams.

Moreover, it is found out that schools did not have the opportunity to show missed programs, because they did not have digitalized copies. To avoid this problem, school directors suggested that the entire programs in each of the six subjects should be digitalized and make available at every school. And schools can show the programs at any time they want. Finally, observation results indicated that the majority of classrooms have satisfactory physical setting for implementing ISTV programs.

5.2. Conclusions

Based on the findings of this study, the following conclusions can be drawn:

1. Schools in the region are equipped with adequate number of plasma TVs and other program receiving materials. However, the implementation progress of instructional satellite TV programs in secondary schools of the region is being constrained by inadequate supply of instructional resources (i.e. TV lesson teacher's and students guides), large class size, absences of well-trained technician, inadequate number of teachers in each subject areas, and absence of reliable power source in those secondary schools that get electricity from generators erected in the compound. In addition, high teaching load, absence of pre-broadcast activities and low level of zone and woreda education offices' support to schools are also hampering the implementation of the program.
2. Teachers' training is a big concern that has enormous influence on the area of implementation. To attain at the intended level through using this technology, teachers should have awareness about the advantages and disadvantages of the technology for students learning. They should have up-to-date knowledge and skill about how to friendly use the technology for teaching and learning purposes. However, this study indicated that subject teachers in the region lack proper orientation or training about the utilization of plasma TV sets and programs for teaching in the classroom.
3. Secondary school (Grade 9-12) students in SNNPR have neutral attitude towards Instructional Satellite TV Programs.
4. Most secondary school teachers in the region have a positive attitude towards Instructional satellite TV programs.

5. Most teachers and students suggested that instructional satellite TV programs incorporate adequate graphics, photographs, and diagrams. In addition, it is also confirmed that plasma TV programs (i.e. in natural science subjects) contain adequate laboratory type demonstrations, which are clearly presented in a way most students can understand. Beside, the demonstrations stay on air for sufficient time. And also the programs maintain consistency when moving from one lesson to the next. Furthermore, it is found out that the contents of the TV programs; students' textbook and teacher's guide are related. However, the time given for students to take notes from the TV screen and carry out exercises during program transmission is inadequate. Similarly, the speed of presentation is not compatible with students' ability. Students did not manage to catch up with the speed of program presentation.

6. Teachers were observed properly carrying out activities during and after the broadcast. In contrast, the majority of subject teachers did not conduct pre-broadcast activities.

7. The classroom's physical environment is the other concern that has impact on the utilization of ISTV programs for teaching learning. Plasma TVs should be well protected from the threat of physical damage. In addition, since these materials can easily fail to function owing to excessive dust, classrooms need to be maintained as clean as possible. It is also advised that classrooms need to have ceilings and appropriate roofs to avoid interference of sound during rainy seasons. In this regard, this study indicated that schools' physical environment is satisfactory for implementing ISTV programs.

8. In order to achieve at the intended level through using this technology (i.e. ICT), the collaboration between all concerned in the system is highly required. In Ethiopia, schools annual operational budgets and other resources are channeled through zonal and

woreda educational settings. These resources need to be timely available for schools with out any bureaucracy so that program implementation would be facilitated. Besides, zone and woreda education offices are required to provide overall administrative and maintenance supports for schools in their attempt to implement the program. Here, the closeness and collaboration between schools and the aforementioned educational settings undoubtedly influences program implementation as well as the outcomes of schooling in the locality. In this regard, based on the findings of this study, it is possible to conclude that the extent of support (i.e. administrative and maintenance) given to schools by woreda and zone education offices was low.

9. Most teachers do not conduct tutorial and make-up classes adequately.

5.3. Recommendations

In the light of the findings of the study, it seems reasonable to suggest the following recommendations

1. Some of the problems faced by schools in implementing satellite TV programs seem the lack of instructional resources like teachers and students guides. As could be understood from the collected information, schools have these materials in soft copy (in CD). Thus, Zonal or regional government should support schools to have the resources to print and distribute these materials for teachers and students at any cost.
2. The problems observed in the classroom on subject teachers and students were numerous and multifaceted. There is lack of integrity between the broadcast and the classroom teacher. During most classroom observations, both were observed being active at the same time. This and the information collected from teachers showed that subject teachers lack the skill to properly utilize instructional satellite TV programs. Thus, it seems indispensable to organize and conduct short-term trainings on the utilization of the TV broadcast in the classroom for subject teachers at zonal level. To solve the problem in the long run, it is essential to integrate the technology with teachers training programs.
3. The interview results with school directors indicated that schools do not know the annual broadcast schedule. As a result, they are facing serious problems to conduct continuous assessment. They are obliged to shut down the broadcast and give tests and mid exams. This is because the broadcast does not stop unless during semesters break for final examinations. Thus, it is essential to create gaps in the annual broadcast schedule for schools so that they conduct continuous assessments like tests and mid exams. In

addition, the annual broadcasting schedule should be declared for all secondary schools in the region.

4. Due to different reasons that might be created with in schools, broadcasting could be interrupted. As a result, certain programs (lessons) would be jumped. To avoid this problem, the entire programs in each of the six subjects should be digitalized and make available at every school. And schools can show the programs at any time they want. This, digitalization of programs is being tested in Awassa Comprehensive Senior Secondary School. And it is advisable to expand the initiative to other secondary schools of the region in which the program is currently functional.
5. A problem of attending the lesson properly was observed on the part of students. According to the results of students' and teachers' questionnaires and interview of school directors, the main reason provided was the speed of presentation of programs. Overall adjustment on the speed of presentation must be made by concerned organ.
6. The other problem that contributed to students' poor attendance was the time given for them to solve problems instructed by the TV teacher during the broadcast. To solve this problem most of the directors interviewed and teachers recommend that worksheets should be prepared for students. Besides, the time allotted for students to take notes from the screen during transmission is not adequate. This also requires adjustment taking students capacity in to account.
7. Based on the existing information one period is 40 minutes. Out of this the broadcast takes a maximum of 30 minutes. The remaining 10 minutes are allotted for pre and post broadcast discussions, which would be carried out by the subject teacher. It seems reasonable for the classroom teacher to provide time shortage as a constraint not to fully help students. Thus the duration given for

the subject teacher in a single period should at least be balanced with that of the broadcasting time to bring meaningful change on students learning.

8. Based on the results of interview with school directors and teachers' questionnaire, zonal and woreda education offices usually reserve or lack cooperation with schools to resolve problems pertinent to instructional satellite TV programs. For instance, when schools consult these settings on the provision of tests and mid exams, they provide working in weekends as a solution. But they leave the responsibility to schools to persuade teachers to work on these days without incentives or extra payment. This is difficult or almost impossible for schools to realize based on the existing realities without the goodwill and financial cooperation of regional or zonal government.
9. Prior to introducing a certain technology for use in the education sector the need to consult teachers possess high importance. Because it is the teacher who will be the front line actor to implement the intended program. In this regard it is recommended for Policy and decision makers to work together with teachers.

References

Aggrawal, J.C. (2004). **Development and Planning of Modern Education**. New Delhi: Vikas Publishing House Pvt.

Ali Yasin Ali. (2005). "Teaching With and Learning From Electronic Media: A Case Study on Satellite TV Instruction in Debre Berhan General Secondary School." MA Thesis, Addis Ababa University (Unpublished Thesis)

Aronson, E., and Others,(1990). **Methods of Research on Social Psychology**. 2nd ed. McGraw-Hill Publishing Company.

Atkinson, F.D, and Locatis,C.N. (1984). **Media and Technology for Education and Training**. London: Charles E. Merrill Publishing Company.

Bates, A. (1986). **Broadcasting in Education**. London: Prince Hall International (UK)

Behera, S.C (1995). **Educational TV Programs**. New Delhi: Deep and Deep Publications.

Cable, R. (1995). **Audio-Visual Hand Book**. London: University of London Press Ltd. Warwick Square.

Cassierer, H.(1984). **Television Teaching Today**. New York: American Book Company.

Chester, G., Garrison, G.R., and Willis, E.E. (1978). **Audio-Visual Materials in Teaching.** 5th edition. Prince-Hall, Inc., Englewood Cliffs.

Damtew, Wolde (2005). An Overview of Information and Communication Technology for Education in Ethiopia. IER Flambeau,Vol.13, No.1.

Dawyer, D.C, Sandholtz, J.H., and Ringstaff, C. (1997). **Teaching with Technology: Creating Student-Centered Classrooms**. New York: Teachers College Press, 1234 Amsterdam Avenue.

Deighton,L.C(1971). **The Encyclopedia of Education**. The Macmillan Company and the Free Press.

Delors, J.(1998). **Education for the Twenty First Century: Issues and Prospects**. France: UNESCO Publishing.

EMA (1991). Schools Radio Programs Utilization Evaluation Report. Addis Ababa: EMPDA Publisher.

EMA (2004). Educational Satellite Television Programs Condensed Teachers' Guide.

Ermias Kebreab(2006). "The Newly Incorporated Satellite Television Program and Students' Learning." MA Thesis, Addis Ababa University (Unpublished).

Finn, J.D.(1960). Technology and Institutional Process. Audio Visual Communication Review; Vol. 8. No.1.

Frantz, J. (1965). The Educational Advantages of Instructional Television: As Compared with Conventional Teaching Methods. The Journal of Higher Education, 36(4), 209-213.

Gordon, T.J (1961). **Technologies: A Technology Assessment**. London: SAGE Publications.

Hawkirdge D. and Robinson, J. (1982). **Organizing Educational Broadcasting.** Paris: The UNESCO Press.

Heinich, R, Molenda, M, Russell, J.D and Smaldino, S.E(1996). **Instructional Media and Technologies for Learning. London:** Prince Hall International (UK)

Howe, M.J (1983). **Learning from Television: Psychological and Educational Research.** Academic Press, Inc.

Jamison, D. and MacAnany, E.(1978). **Radio for Education and Development**. London: SAGE Publications.

Kinder, J.S. (1959). **Audio Visual Materials & Techniques** (2nd ed.). New York: American Book Company.

MacLennan, D.W. and Griffith. B.L. (1967). **Improvement of Teaching By Television.** New York: McGraw-Hill Book Company.

McDermott, J. (1981). **Technology. The Opiate of the Intellectuals: Technology and Man's Future**. New York: St. Martin's Press.

Meierhenry, et al. (1984). **Audio-Visual Technology**. London: SAGE Publications.

Miller, E.E. (1987). Educational Media and Technology Yearbook. Littleton, Colorado: Libraries Unlimited, Inc. Vol. 13

Miller, L., Tahy,C., and Hatanto, K.(1966). **Adult Education and Television**. England: The Capitalield Press, St. Albans.

MOE (2005). Education Statistics Annual Abstract. Addis Ababa: EMPDA Publisher.

MOE (2002). The Education and Training Policy and Its Implementation. Addis Ababa: EMPDA Publisher.

Mohanty, J. (1984). **Educational Broadcasting: Radio and Television**. New Delhi: Sterling Publishers.

NEURONET (2005). ICT Training Manual Prepared for School Directors, Teachers and School Net Focal Persons.

Risk, T.M. (1958). **Principles and Practices of Teaching in Secondary Schools**(3rd ed.). New York: American Book Company.

Schramm, W. (1977). **Big Media and Little Media: Tools and Technologies for Instruction.** London: SAGE Publication.

Semagne Adane(2006). "The Successes and Challenges of Teaching Grade Nine English Through satellite TV in Three Selected High Schools in Addis Ababa." MA Thesis, Addis Ababa University (Unpublished).

Sharma, B.M. (2005). **Media and Education.** New Delhi, India: Communication Publishers.

Shukla, L.W., and Kumar, J. (1977). **Educational Broadcasting**. Paris: The UNESCO Press.

Sikes, R.G. (1980). Programs for Children: Public Television in the 1970s. Public Telecommunications Review, 8(5)

Teshome Nekatibeb, (1998). **Media Utilization and School Improvement.** Institute of International Education Stockholm University.

Tewodros Gizachew (2006). "The Effect of the Newly Incorporated Satellite TV on Students' Learning." MA Thesis, Addis Ababa University (Unpublished).

Unwin, D., and McaLeese, R. (1988). **The Encyclopedia of Educational Media Communications and Technology**. London: Greenwood Press.Waniewick, I(1972). **Broadcasting for adult Education: A Huide Book to Worldwide Experience**. Paris: The UNESCO Press.

Willis, E.E., Garrisson. G.R., and Chester, G.(1978). **Television and Radio**. London: Prince-Hall, Inc., Englewood Cliffs.

Wittich, W.A., and Schuller, C.F. (1973). Instructional Technology. New York: Harper and Row.

Yared, Gizachew (2006). "Re-Evaluating Teacher Development in Ethiopia for the Integration of ICTs into the Classroom on Teacher Education for Sustainable Development by College of Education, Addis Ababa University, Debre-Ziet."

በትምህርት መገናኛ ዘዴዎች ቅንጅታዊ አጠቃቀምና አቅጣጫ አውደ ጥናት ለውይይት የቀረቡ ጽሑፎች ትምህርት መገናኛ ዘዴዎች ድርጅት አ.አ. ህዳር /1990/ ዓ.ም.

ሰብስቤ ሰማ /1997/ ትምህርት በቴሌቪዥን- በትህርት መገኛኛ ዘዴዎች ድርጅት ለክልል ትምህርት ባለሙያዎች በተደራጀው መሰረታዊ ትምህርት መገናኛ ዘዴዎች አጠቃቀም ስልጥና የቀረበ።

በሁለተኛ ደረጃ ት/ቤቶች የሳተላይት ትምህርት ቴሌቪዥን ፕሮግራሞች የይዘትና የአጠቃቀም ግምገማ በትምህርት ቴሌቪዥን ፕሮግራም ዝግጅት ቡድን የቀረበ ትምህርት መገናኛ ዘዴዎች /1997/ ዓ.ም.

ጴጥሮስ ሩልታሞ/1997/ በኢትዩጵያ ለትምህርት ጥራት ፍትሐዊ ስርጭት የኢንፎርሜሽን ኮሚኒኬሽንና ሚና።

Appendix-1

Teachers' Questionnaire

A Questionnaire to be filled in by Secondary School Teachers
School of Graduate Studies

This study aims at assessing the problems and prospects of implementing instructional satellite television programs in secondary schools of Southern Nation Nationalities and Peoples Region (SNNPR). Your school has been selected to participate in the present study. Specifically, this questionnaire has the objective of collecting information about:

- Availability and use of instructional satellite television program receiving and teaching learning support materials in secondary schools
- Attitude of teachers and students toward instructional satellite TV programs.
- Availability of teachers' Pre-service and on-job trainings
- Implementation constraints of instructional satellite TV programs in schools.
- Instructional Satellite Television program organization contents and presentations

The information that could be collected through this questionnaire is going to be utilized solely for the present study. Therefore, your cooperation through providing genuine information is invaluable to complete the study. All the information you provide will be confidential. So, you are kindly requested to complete the questionnaire as genuinely as you can. Do not write your name on the questionnaire.

Thank you in advance for your cooperation

Direction

Please carefully read the instruction at the beginning of each section and respond to each question as appropriate.

Section One: Personal Data

Please mark with a tick (✓) on the space provided for your responses (Boxes) except for those questions that require written responses.

1. Zone:
2. Name of School:
3. Sex: a) Female ☐ b) Male ☐
4. Qualification: a) M.A/Sc ☐ b) BA/Sc ☐ c)Diploma ☐ d)Others ☐
5. Age a) 22-25 years ☐ b) 26-29 years ☐ c)30-33 years ☐ d) 34-37 years ☐ c)38 years and above ☐
6. Total service years in teaching profession

a) Below 1 year [ ]
b) 1-5 years [ ]
c) 6-10 years [ ]
d) 11-15 years [ ]
e) 16-20 years [ ]
f) above 20 years [ ]

7. For how long have you thought using plasma television?
   a) For the first time [ ] b) For two years and above [ ]
8. Your total teaching load in periods per week
   a) Less than 10 [ ] b) 10-15 [ ] c) 16-20 [ ]
   d) 21-25 [ ] e) above 26 [ ]

Section Two: On Materials and Facilities Availability

1. Are there sufficient numbers of functional plasma televisions in your school?
   a) Yes [ ] b) No [ ]
2. How often do the plasma television sets fail to function in your school?
   a) Always [ ] b) Occasionally [ ] c) Uncertain [ ]
   d) Sometimes [ ] e) Never [ ]
3. If you have ever experienced any failure of plasma TV program transmission, what are the usual causes for the incident? Please list them in order of severity.
   i.
   ii.
   iii.
4. How do you conduct the teaching learning process when plasma TV broadcast fails?

5. Are there sufficient numbers of plasma TV lesson teacher's guide in your school?
   a) Yes [ ] b) No [ ]
6. If your answer for question number 5 is "No" what mechanisms do you use to conduct the teaching process?

7. It is three years since the program has started. What are the major resources in short supply that created problems in program implementation?

Section Three: Teachers' Attitude Toward Instructional Satellite Television Program

Each of the statements below expresses an attitude towards Plasma TV instruction. Please put a mark with a tick (✓) what your attitude is with respect to each statement in only one of the five alternatives
(i.e. 5= strongly agree 4= agree 3= uncertain 2= disagree
1= strongly disagree)

No	Item	5	4	3	2	1
1	Plasma TV programs support the teacher in conducting the teaching task					
2	Teachers have a good opportunity to learn teaching techniques from plasma TV programs					
3	Plasma TV programs improve the quality of secondary education					
4	Plasma TV programs have provided the solution for the long-standing laboratory related problems in secondary schools					
5	Plasma TV education seriously affects students learning					
6	Satellite TV broadcasts make me secured					
7	I dislike not only hearing but also thinking about plasma TV broadcasts					
8	Plasma TV programs make the education system less flexible than ever before					
9	Students achieve more in academic subjects when supported by plasma TV than with out it					
10	In general I have a positive attitude towards satellite TV programs					

Section IV: Teacher Training and Implementation Constraints

1. Have you been trained on the utilization of satellite TV programs receiving materials prior to the introduction of the program into classroom teaching?

   a) Yes [ ] b)No [ ]

2. If your answer for question number 1 is "Yes" what was the arrangement of the training?

   a) Pre-service training [ ] b) On job training [ ]

   c) Both on job and pre-service training[ ]

3. Have you participated while the instructional TV programs were developed?

   a) Yes [ ] b) No [ ]

4. Have you taken teacher training program?

   a) Yes [ ] b) No [ ]

5. If your response for question no 4 is "yes", did the teachers training courses incorporate how to implement satellite TV programs?

   a) Yes [ ] b)No [ ]

6. Does the size of students per class have created a problem on the proper implementation of satellite TV broadcasts in the schools?

   a) Yes [ ] b)No [ ]

7. If your answer for question number 6 is "yes", please mention the instructional problems you have faced in order of severity?

   i.) _____

ii)

8. How do you rate the support given by zonal and woreda education officials to schools for the overall implementation of satellite TV programs?
   a) High [ ] b) Medium [ ] c) Low [ ]
9. Do you provide support for students during transmission as instructed by the plasma TV teacher?
   a) Yes fully [ ] b) Yes partially [ ] c) No at all [ ]
10. If your response for question number 9 is "b" or "c" what are your reasons not to support fully?

11. Do you help students in their learning after program transmission?
   a) Yes [ ] b)No [ ]
12. If your answer for question number 11 is "No", what are your reasons not to do so?

13. What are the major problems that you have encountered in implementing plasma TV programs in the classroom?

14. What solutions do you suggest to maximize the technology's benefit for students learning in the future?

Section Five: Program Organization, Contents and Presentation

1. The speed at which the plasma television presents the daily lesson is?
   a) High [ ] b) Medium [ ] c) Slow [ ]
2. Extent of adequacy in incorporating graphics, photographs and diagrams in the TV?
   a) Inadequate [ ] b) Less adequate [ ] c) More adequate [ ]
3. Whether students have enough time to take notes during transmission?
   a) Inadequate [ ] b) Less adequate [ ] c) More adequate [ ]
4. Time adequacy for students to solve exercises during the lesson?
   a) Inadequate [ ] b) Less adequate [ ] c) More adequate [ ]
5. Adequacy of laboratory type demonstrations in the TV program particularly in natural science subjects
   a) Inadequate [ ] b) Less adequate [ ] c) More adequate [ ]
6. Whether demonstrations clearly presented so that students can easily understand
   a) Inadequate [ ] b) Less adequate [ ] c) More adequate [ ]

7. Whether demonstrations stay on air for sufficient time
   a) Inadequate [ ] b) Less adequate [ ] c) More adequate [ ]
8. Whether the TV program maintains consistency from one lesson to the next
   a) Inadequate [ ] b) Less adequate [ ] c) More adequate [ ]
9. Comment on the flexibility of program transmission?

   _____

   _____

   To what extent the contents of the TV program, students textbook and teachers guide are related?
   a) Very related [ ] b) Related [ ] c) Some what [ ] d) Unrelated [ ]

Appendix- 2

Students' Questionnaire

በ2ኛ ደረጃ ት/ቤት ተማሪዎች የሚሞላ መጠይቅ
አዲስ አበባ ዩኒቨርሲቲ
ድህረ ምረቃ ት/ቤት

ይህ ጥናት በኘላዝማ ቴሌቪዥን ትምህርት አተገባበር ዙሪያ በደቡብ ብሔር ብሔረሰቦችና ህዝቦች ክልል 2ኛ ደረጃ ት/ቤቶች የታዩትን ችግሮች ለመለየትና መፍትሔዎቻቸውን ለመሠንዘር የሚያስችል አጠቃላይ ዓላማ የያዘ ነው።

ይህ መጠይቅ በፕሮግራሙ አጠቃቀምና አተገባበር ዙሪያ ከተማሪዎች መረጃ ለመሰብሰብ ነው።

ክፍል አንድ፡ የተማሪዎች የግል መረጃ

የሚከተሉትን ጥያቄዎች በባዶ ስፍራው ላይ በመፃፍ ወይም በሳጥኑ ውስጥ የጭረት (✓) ምልክት በማድረግ ምላሽ ይስጡ።

1. ዞን ---------- 2. የት/ቤቱ ስም፡---------- 3. ወረዳ ----------
4. ዕድሜ ---------- 5. ፆታ ሀ. ወንድ☐ለ. ሴት ☐ 6. የክፍል ደረጃ------

ክፍል ሁለት፡ ተማሪዎች ለኘላዝማ ቴሌቪዥን ትምህርት ያላቸው አስተሳሰብ (attitude)

ለኘላዝማ ቴሌቪዥን ትምህርት ያለህን/ያለሽን አስተያየት የሚከተሉትን ዓረፍተ ነገሮች በማንበብና ከፊት ለፊቱ ከሚገኙት 5 ሣጥኖች መካከል በአንዱ ውስጥ የጭረት (✓) ምልክት በማድረግ ግለፅ/ጪ።

(5= በጣም እስማማለሁ 4= አስማማለሁ 3= እርግጠኛ አይለሁም
2= አልስማማም 1= በጣም አልስማማም)

ተ.ቁ	ዝርዝር	5	4	3	2	1
1	የኘላዝማ ትምህርት በቤተመፅሐፍ አምጣያ በማስተማር ያሉትን ችግሮች ስለሚቀርፍ የተሻለ ሆኖ አግኝቼዋለሁ					
2	የኘላዝማ ትምህርት ከመጣ ወዲህ የትምህርት አቀባበሌ ተዳክሟል					
3	የኘላዝማ ትምህርት ለትምህርት ያለኝን ፍላጎት ስለሚጨምር ብዙ አንድማር ይረዳኛል					
4	ቀድሞ ከተለመደው የመማር ማስተማር ዘዴ ይልቅ የቴሌቪዥን ትምህርት የተሻለ ነው					

5	በክፍል ውስጥ መምህር ብቻ ከሚሰጡ የትምህርት ዓይነቶች በቴሌቪዥን ተደግፈው በሚሰጡት ትምህርቶች የተሻለ ውጤት አገኛለሁ።					
6	የፕላዝማ ትምህርት የተማሪዎችን የእንግሊዝኛ ቋንቋ የማዳመጥ ክህሎት ያዳብራል					
7	የፕላዝማ ትምህርት ማስታወሻ ለመውሰድና የክፍል ስራዎችን ለመስራት በቂ ጊዜ ስለማይሰጠኝ አልተስማማኝም					
8	የፕላዝማ ትምህርት መምህራን በተገቢው መጠን እንዳይረዱን ምክንያት ሆኗል።					
9	የፕላዝማ ትምህርት ስርጭት የጊዜ ሰሌዳ አከባቢያዊ እውነታዎችን ያገናዘበ አይደለም					
10	በአጠቃላይ ለፕላዝማ ትምህርት መልካም ግንዛቤና አስተሳሰብ አልኝ					

ክፍል ሥሥት፡ ከፕላዝማ ትምህርት አኳያ የትምህርት መሳሪያዎች አቅርቦትና መሰል ችግሮች።

1. በትምህርት ቤታችሁ መደበኛው የፕላዝማ ትምህርት ስርጭት ለምን ያህል ጊዜ ተቋርጦ ያውቃል?

   ሀ. ሁል ጊዜ ☐ ለ. ብዙ ቀናት ☐ ሐ. እርግጠኛ አይደለሁም ☐

   መ. አንዳንድ ጊዜ ☐ ሠ. ተቋርጦ አያውቅም ☐

2. በትምህርት ቤታችሁ መደበኛው የፕላዝማ ትምህርት ስርጭት መቋረጥ ካለ መንስኤ የሆኑትን ዋና ዋና ችግሮች በቅደም ተከተል ይዘርዝሯቸው?

   ሀ. ----------

   ለ. ----------

   ሐ. ----------

3. የፕላዝማ ትምህርትን በተገቢው ሁኔታ ለመከታተል የሚስችለው በቂ የሆነ የተማሪው መምሪያ አቅርቦት አለ?

   ሀ. አዎ ☐ ለ. የለም ☐

4. መደበኛው የፕላዝማ ቴሌቪዥን ትምህርት ስርጭት ሲቋረጥ የክፍል ውስጥ መምህሩ ተክተው ሀ. ያስተምራሉ ☐ ለ. አያስተምሩም ☐

5. የፕላዝማ ቴሌቪዥን ትምህርት የአቀራረብ ፍጥነት እንዴት ይገመግሙታል?

   ሀ. በጣምፈጣን ☐ ለ. መካከለኛ ☐ ሐ. ዝግያለ ☐

6. የክፍል ስራዎችን ለመስራት በቴሌቪዥን መምህሩ የተሰጠው ጊዜ?

   ሀ. ያንሳል ☐ ለ. በቂ ነው ☐ ሐ. ይበዛል ☐

7. ተማሪዎች ማስታወሻ እንዲወስዱ የተሰጠው ጊዜ?

   ሀ. ያንሳል ☐ ለ. በቂ ነው ☐ ሐ. ይበዛል ☐

8. እያንዳንዱ የቴሌቪዥን ፕሮግራም በቂ በሆኑ ስዕሎችና ፎቶግራፎች የተደገፈ ነው?

ሀ. ያንሣል ☐ ለ. በቂ ነው ☐ ሐ. ይበዛል ☐

9. የክፍል ውስጥ መምህሩ/ሯ ከፕሮግራም ስርጭት በፊት መግቢያ የሚሆን ትምህርት ይሰጣሉ? ሀ. አዎ ☐ ለ. አይሰጡም ☐

10. የክፍል ውስጥ መምህሩ/ሯ በፕሮግራም ስርጭት ወቅት ከቴሌቪዥን መምህሩ/ሯ ጋር በተቀናጀ መልኩ ተማሪዎችን ይረዳሉ?

ሀ. አዎ ☐ ለ. አይረዱም ☐

11. የክፍል ውስጥ መምህሩ/ሯ ከፕሮግራም ስርጭት በኋላ ተገቢውን ማጠቃለያ ይሰጣሉ? ሀ. አዎ ☐ ለ. አይሰጡም ☐

12. በፕላዝማ ቴሌቪዥን ትምህርት አጠቃቀም ዙሪያ በትምህርት ቤታችሁ ውስጥ ያጋጠሟችሁን ዋና ዋና ችግሮች በሚከተለው ሰፍራ ላይ በቅደም ተከተል ይሳሏቸው።

ሀ. ----------

ለ. ----------

ሐ. ----------

13. በተራ ቁጥር 12 ላይ የዘረዘራቸውን ችግሮች በመቅረፍና ቴክኖሎጂውን በተሻለ መልኩ ለትምህርት ስራ ለመጠቀም መፍትሔ የሚሏቸውን ሀሣቦችና መሻሻል የሚገባቸውን ጉዳዮች ቢጠቁሙ?

---

14. የፕላዝማ ቴሌቪዥን ትምህርት የተማሪው መፅሐፍና የመምህሩ መምሪያ ይዘቶች ቁርኝትን እንዴት ይገመግሙታል;

ሀ. በጣም ይያያዛል☐ ለ. ይያያዛል☐ ሐ. በጥቂቱ ይያያዛል ☐ መ. አይያያዝም☐

15. የክፍል ውስጥ መምህሩ ከመደበኛው የፕላዝማ ቴሌቪዥን ትምህርት ክፍለ ጊዜ ውጪ ድጋፍ ይሰጣሉ? (ማጠናከሪያና ማካካሻ ትምህርቶች ወዘተ.)

ሀ. ይሰጣሉ ☐ ለ. አይሰጡም ☐

Appendix-3

Classroom Observation Checklist

Zone: Name of the School:

Grade Level: Date of Observation:

Period: Lesson Topic:

No.	Instructional Considerations	Yes	Somehow	No
1.	Pre-broadcast Activities			
1.1.	Does the teacher holds materials required by the program			
1.2.	Does the subject teacher check students attendance			
1.3.	Does the subject teacher conduct pre-broadcast discussions			
2	Activities during Program transmission			
2.1.	Motivate students to attend the program and monitor class discipline			
2.2	Provide assistance and follow-up students to carry out tasks instructed by the program			
2.3.	Do not interrupt during program transmission			
3.	Post-broadcast Activities			
3.1.	Provide lesson summary			
3.2.	Provide feedback for questions raised by students			
3.3.	Introduce the topic and content of the next program			

Appendix-4

Schools' Physical Environment Observation Checklist

No	Physical Environment Considerations	Satisfactory	Average	Not Satisfactory	Total
1.	Safety features for plasma TV and electrical connections				
2.	Roof situations and the presence of Ceilings				
3.	The cleanliness of the classrooms				
4.	Detracting influences				

Appendix-5

Interview Guide for School Directors

1. The number and current status of satellite TV program receiving materials? Have you encountered any problems in using these facilities?
2. How do you describe the availability of satellite TV program supporting materials such as students' guide, teacher's guide e.t.c in your school?
3. If your school has experienced satellite TV program transmission failure what are the main causes in terms of severity?
4. The availability of teachers' training on the utilization of satellite TV programs in your school?
5. What do you say about the detracting influences and attractiveness of your school in relation to implementing the ISTV program?
6. Would you mention the problems related with the contents of the TV programs?
7. What about the presentation?
8. How do you describe the attitude of students, teachers and the community about satellite TV education?
9. What problems have you encountered so far in implementing satellite TV programs?
10. What do you think are the solutions for the aforementioned problems?
11. What should be done in the future pertaining to the satellite TV programs so that its benefit for students learning will be improved?

Appendix-6

Interview Guide for Regional Education Bureau Officials

1. What are the major challenges encountered in implementing the project in your region?
2. Would you comment on the contents and presentation of satellite TV programs? What are the strengths and problems associated with the programs?
3. What measures have been taken so far to solve these problems?
4. What should be done in the future pertaining to the satellite TV programs so that its benefit for students learning will be improved?

Appendix-7

Interview Guide Prepared For Media Experts

1. What do you say about the contribution of Instructional Satellite Television programs to students' learning, teachers and to the betterment of general secondary education?
2. What do you comment on the quality and standards of satellite TV programs contents and presentation?

3. Do you think the contents of satellite TV programs go in line with the current curriculum (i.e. Do the TV lesson, students textbook, teacher's guides are supplementary to each other?)
4. What do you say about the provision of training to classroom teachers on handling and utilization of instructional satellite TV programs?
5. What do you think are the major constraints that schools encountered in implementing the programs?
6. What do you suggest for the betterment of satellite TV programs implementation by schools?
7. Would you comment about the future of instructional satellite TV programs?

Appendix-8

Chi-square Computation for the Attitude Score of Students' and Teachers'

A. Attitude Scores Above and Below the Median of Students by Grade Level

Category	Student Respondents							
	Grade 9		Grade 10		Grade 11		Grade 12	
	f_o	f_e	f_o	f_e	f_o	f_e	f_o	f_e
Above Median	118	119	56	57	56	55.5	41	42.5
Below Median	120	119	58	57	55	55.5	44	42.5
Total	**238**	**238**	**114**	**114**	**111**	**111**	**85**	**85**
χ^2=**0.167**								

χ^2 (Chi-square) $= \Sigma \frac{(f_o - f_e)}{f_e}$ where, f_o = Observed Frequency, f_e = Expected Frequency

$$\chi^2 = \frac{(118-119)^2}{119} + \frac{(120-119)^2}{119} + \frac{(56-57)^2}{57} + \frac{(58-57)^2}{57} +$$

$$\frac{(56-55.5)^2}{55.5} + \frac{(55-55.5)^2}{55.5} + \frac{(41-42.5)^2}{42.5} + \frac{(44-42.5)^2}{42.5} = 0.167$$

B. Attitude Scores Above and Below the Median of Teachers

Category	**Teachers respondents**			
	Frequency observed (f_o)	**Percentage Of Frequency observed** (f_o)	**Frequency expected** (f_e)	**Percentage Of Frequency expected** (f_e)
Above Median	30	83.33%	18	50%
Below Median	6	16.67%	18	50%
Total	**36**	**100%**	**36**	**100%**
χ^2 =**16**				

$$\chi^2 = \frac{(30-18)^2}{18} + \frac{(6-18)^2}{18} = 16$$

Appendix-9

Table .9.1 Appropriateness of Program Organization and Presentation

No.	Item	Teachers' responses				Students' responses			
		Adequate	Less Adequate	Inadequate	Total	Adequate	Less Adequate	Inadequate	Total
1.	Extent of adequacy of the TV programs in incorporating graphics, photographs And diagrams	21 (58.33%)	15 (41.67%)	0 (0%)	36 (100%)	395 (65.83%)	28 (4.67%)	177 (29.5%)	600 (100%)
2.	Whether students have enough time to take notes during transmission	2 (5.56%)	9 (25%)	25 (69.44%)	36 (100%)	15 (2.5%)	81 (13.5%)	503 (83.83%)	599 (99.83%
3.	Time adequacy for students to solve exercises during the lesson	1 (2.78%)	16 (44.44%)	19 (52.78%)	36 (100%)	17 (2.83%)	91 (15.17%)	491 (81.83%)	599 (99.83%
4.	Adequacy of laboratory type demonstrations in the TV program particularly in natural science subjects	28 (77.78%)	6 (16.67%)	2 (5.56%)	36 (100%)	-	-	-	
5.	Whether demonstrations clearly presented so that students can easily understand	19 (52.78%)	11 (30.56%)	6 (16.67%)	36 (100%)	-	-	-	
6	Whether demonstrations stay on air for sufficient time	17 (47.22%)	6 (16.67%)	13 (36.11%)	36 (100%)	-	-	-	
7.	Whether the TV program maintains consistency from one lesson to the next	25 (69.44%)	9 (25%)	2 (5.56%)	36 (100%)	-	-	-	
		High	Medium	Slow		High	Medium	Slow	

8.	The speed at which the TV presents the daily lesson	27 (75%)	7 (19.44%)	2 (5.56%)	36 (100%)	455 (75.83%)	129 (21.5%)	16 (2.67%)	600 (100%)
		Very related + related	Some what Related	Unrelated		Very related + related	Some what Related	Unrelated	
9.	The extent in which the contents of the TV program, students' text book and teachers' guides are related	19 (52.78%)	17 (47.22%)	0	36 (100%)	348 (58%)	180 (30%)	68 (11.33%)	596 (99.33%

Declaration

I, the under signed, declare that this thesis is my original work and has not be presented for a degree in any other university, and that all sources of material used for the thesis have been duly acknowledged.

Name: Anagaw Tadesse Woldeyes

Signature: _____

Date: July 20, 2007

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

Name: Zenebe Baraki(Dr.)

Signature: _____

Date: July 20, 2007