

**ASSESSING THE CURRENT STATUS OF THE NEWLY REVISED
PLASMA TELEVISION PROGRAM INSTRUCTION: THE CASE
OF SILTE ZONE SECONDARY SCHOOLS**

BY:

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DEPARTMENT OF TEACHER EDUCATION AND CURRICULUM STUDIES**

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**A THESIS SUBMITTED TO DEPARTMENT OF TEACHER EDUCATION AND
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Declaration

The researcher hereby declares that, this thesis on the title, “Assessing the Current Status of the Newly Revised Plasma Television Program Instruction: The case of Silte Zone Secondary Schools” is the original work and that all sources of materials used for the thesis have been dully indicated and acknowledged with complete references.

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This is to certify that the thesis prepared by Anwar Ahmed Hussien entitled: **Assessing the current status of the newly revised plasma television program instruction: the case of Silte Zone Secondary Schools** and submitted in partial fulfillment of the requirement for the degree of Master of Arts complies with the regulation of the university and meets the accepted standards with originality and quality.

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Acronyms and Abbreviations

ANNOVA- Analysis of variance

CD - Compact Disc

DVD- Digital Video Disc

E.C- Ethiopian Calendar

ET- Educational Technology

FDRE -Federal Democratic Republic of Ethiopia

GDP - Gross Domestic Product

ICT- Information Communication Technology

ITV- Instructional Television

MoE- Ministry of Education

NGO- Non-Government Organization

PTV- Plasma Television

PTVI - Plasma Television Instruction

PTVP – Plasma Television Program

SNNPRS- Southern Nations Nationalities and Peoples Regional State

SPSS - Statistical Package for Social Science

TV– Television

Abstract

The main objective of this study is to assess the current status of the newly revised plasma television program instruction (PTVPI) in Silte Zone secondary schools. Hence, it tried to examine the extent to which classroom teachers and students perform their roles as stated in plasma guide. In addition to this, it tried to examine the extent to which principals support PTVPI, strengths of the newly revised PTVP and factors affecting it. To accomplish this purpose, the study employed descriptive research design. The study was carried out on 6 secondary schools which were selected through the combination of both available and simple random sampling techniques. Then, a total of 304 individuals participated in the study. Among them, 130 teachers and 6 supervisors were included in the sample through available sampling technique. Additionally, 156 students were included through stratified random sampling while the remaining 12 principals were included through the combination of both purposive and available sampling techniques. Questionnaire, interview and observation checklist were used to collect the necessary data regarding the issue. The analysis of the quantitative data was carried out by using percent, mean, standard deviation, independent sample t-test and one-way ANOVA while qualitative data which were obtained through open ended questions and interview were analyzed using narration. The result of the study revealed that, both classroom teachers and principals are sometimes (moderately) performing their roles while students are usually performing their roles. Moreover, the study found out that, the strengths of the newly revised PTVP are highly supporting both the teachers and students to perform their roles while shortage of new PTVs that take CDs and lack of DVDs in schools are extremely affecting PTVPI among many factors in the study area. From the results of the finding, it is possible to conclude that, status of PTVPI in the study area is moderate. Based on the findings of the study, it is recommended that, government need to provide material support to schools and technical support to both teachers and principals through training in order to improve status of PTVPI in the study area by participating the community as well as non-governmental organizations (NGOs).

CHAPTER ONE

INTRODUCTION

This chapter contains different sections like background of the study, statement of the problem, objectives of the study, delimitations and limitations of the study, operational definitions of terms and organizations of the paper.

1.1. Background of Study

Before the twentieth century, the dominant means of instruction were the teacher, the textbook, and the chalkboard. For most of the twentieth century, the predominant technology in education were print media like books, paper, pens, and pencils and they were also the fundamental means for accessing, communicating and sharing information. Nowadays, information communication technology (ICT) has evolved and become more central to teaching and learning. Since the turn of the century, teachers have used a variety of audio and visual aids to supplement their instruction including film, radio, slides, recordings, and the overhead projector (Farenga & Ness, 2005).

ICT which includes radio, instructional television (ITV) and newer digital technology such as computers and the internet, are potentially powerful tools for extending educational opportunities (formal and non-formal) to one and all. It also provides opportunities to deploy innovative teaching methodologies and interesting material that creates an interest in students (Goyal, Purohit & Bhagat, 2010). In line with this, Khan, Hassan and Clement (2012) stated that, ITV is a means to promote new methods of instruction (teaching and learning). It should be used to develop students' skills for cooperation, communication, problem solving and lifelong learning.

Moreover, according to Afshari, Baker, Luan, Samah and Fooi (2009) the utilization of ITV in education creates a powerful learning environment and it transforms the learning & teaching process in which students deal with knowledge in an active, self-directed and constructive way because technology can change/alter how people access, gather, analyze, present, transmit, and simulate information.

Furthermore, Syed (2010) stated that, technology and students' development of technology-related skills is very crucial factor in the 21st century knowledge-based global economy. Therefore, the use of instructional technology to reduce global inequalities through such vehicles as internet-based distance learning, interactive video and ITV is very important in today's education. In areas where

electricity and telephone lines are available, such approaches to learning may contribute significantly to improve the quality of educational processes.

Therefore, countries all over the world have identified the significant role of ICT in improving education and have invested heavily in increasing the number of computers in schools and in the networking of classrooms (Papanastasiou & Angeli, 2008).

To this end, the federal government of Ethiopia which come in to power after the fall of Derg regime also understood the importance of ICT and inculcated its issue in the 1994 education and training policy by stating it under article 3.7 as follows;

In order to promote the quality, relevance and expansion of education, due attention will be given to the supply, distribution and utilization of educational materials, educational technology and facilities (MoE, 1994, p.28).

As a result, many scholars welcomed the issuance of the present Education and Training Policy in April 1994. The reasons behind this as to Mekashe (2005) were; first it was absolutely unthinkable to introduce a democratic order in a country with an education system of the past governments (both the monarchial and Derg regime). Secondly, the 1994 education and Training policy was aimed at achieving the national economic and social development goals of the country by addressing equity, efficiency, quality, and access for education.

The 1994 education and training policy indicated that, secondary school curriculum takes 4 years with in two cycles. Thus, its implementation (2 years of first cycle secondary/general secondary and another 2 years of second cycle secondary/preparatory) was started in 1993 E.C at grade 9 and reached grade 12 in 1996 E.C. However, qualified teachers and equitable education across the country has not been yet achieved (Mekasha, 2005). As a result, the government of Ethiopia looked for alternative/supplementary strategies. Accordingly, it found out that, one of the alternatives was the use of ICT in all government secondary schools of the country and finally the government has launched the plasma mode of instruction (Solomon, 2008).

As to Samson (2009), to start the application of ICT in all secondary schools, the government of Ethiopia turned its face to two South African companies so that they can create extensive television-based curriculums to be taped in Johannesburg. The two companies named as Kagiso and Sasani prepared supporting material for both teachers and students like plasma guide and teachers

guide in addition to educational television programs for grades 9 to 12 known as the Ethiopian Satellite Education Project. After making the satellite project ready for use, 450 schools were equipped with 8000 plasma screens at the end of 1996 E.C.

According to Samson (2009), the main aim of this project was reaching millions of students scattered in mostly rural areas. He also added that, the project was aimed at alleviating the lack of enough skilled teachers, inadequate infrastructure and overcrowded classroom instruction in Ethiopia's educational system. In line with this, Temtim and Rogers (2008) stated that, recently the Ethiopian government introduced plasma mode of education to all high schools of the country to overcome the problem of qualified teachers in the remote villages where qualified teachers are not willing to work. They also added that, the government introduced it to reduce serious bottlenecks of the countries educational services such as shortage of teachers, schools and other educational logistics.

Regarding this, Solomon (2008) also stated that, the rationale behind the introduction of the new plasma based instruction seemed to address quality and equitability of education. The second rationale behind the introduction of plasma technology for Solomon was to provide all secondary schools of the nation's opportunity of getting uniform and standard instruction. Moreover, Tefera Waluwa (undated) the previous Minister of capacity building underscored this notion by stating as:

...the aim of introducing plasma TV technology is to overcome some of the geographical disadvantages faced by this vast country. If we have to connect the most remote region by road, it will take a long time; therefore the easiest way to solve this problem is using satellite technology. So our aim is connecting the citizen who is in the most remote place not only to his next village, but to the whole world (as reported by Frith on, times online newspaper p.2).

Therefore, in 1997 E.C the teaching learning process was started to be run largely via ITV that is transmitted from the center using satellite technology. For this program, MoE selected six subjects of grade 9-12: English, Mathematics, Physics, Chemistry, Biology and Civic & Ethical Education (Solomon, 2008).

Later in 1999 E.C three other subjects like technical drawing, general business and economics were also added in plasma broadcast program for preparatory students. However, the transmission of other subjects with the exception of three subjects (technical drawing, general business and

economics) was interrupted in 2003 E.C. The main reasons behind this were; first, the policy or curriculum designed strictly contradicts with the implementation of the policy (Solomon, 2008). That means, the planned curriculum insists the instructional process to be student centered but the amount of instructional time allocated to PTV instruction is too much (30 to 35 minutes) so that students and classroom teacher do not get enough time to discuss (interact) together.

The second reason for interruption of PTV was disappointment of MoE on PTV learning program (Joshy & Verspoor, 2012). That means; MoE found out and cited a number of reasons for its inability to influence the learning outcomes. Some of them are: the language level is too difficult, the lesson proceeded too quickly, interaction is not possible (reduced two way communication), learning is passive, teachers have little time to discuss lesson points with their students (it has minimized the role of teachers in their classroom).

The third reason for the interruption of the PTV broadcast was the revision of student text book. Towards this, MoE (2005) stated that:

To improve quality of education curriculum will be revised every five years so that it becomes relevant to the child's experience and environment; responds to parental expectations and demands; and at the same time prepares students not for today's world but for a society that is aspiring to develop in the next decades (p.38).

To implement the above rule, in 2002 E.C MoE revised the previous students' text book and published it by funds obtained from governments of Finland, Italy, Netherland and United Kingdom (FDRE, 2009). Within this year the new books were started to be distributed to different regions of the country and some secondary schools utilized the new books in some subjects like chemistry, Physics, Biology and mathematics, ICT and Civic & Ethical Education. The remaining books like Geography and English were revised in 2003 E.C and then distributed to different regions of the country in the same manner. So the implementation of the new revised (currently functioning) text books was fully practiced in 2004 E.C in all secondary schools of the country. In line with the revision of text books in 2002 and 2003 E.C, MoE also revised the previous plasma program to avoid the identified shortcomings (drawbacks) of the previous PTVP. Regarding this, Joshy and Verspoor (2012) stated that:

One of the weaknesses of the previous PTV system was teachers cannot see the lesson prior to broadcast; they are unable to integrate them in to their own programs.

This in turn undermines their authority. MoE concludes that the problem lies not with in the technology but with the way in which it is used. Therefore, ministry of education has recently modified the plasma program to correct these weaknesses (p. 67).

The second implication for the existence of change (revision) on the previous plasma program was indicated by (MoE, 2010) as written bellow;

In expanding and improving plasma-TV lesson delivery, new specifications have been made for six previously and three newly considered subjects. In addition, Digitized Satellite TV lessons have been piloted and preparations are under way to broadcast these digitalized education programs online, by DVD and CD (p. 18).

In short, the above paragraphs show us that, MoE has made modification on the previous PTVP to avoid its weaknesses. Some of the major areas of modifications include; First, the change of broadcast time from 30 minutes of PTV teacher and 10 minutes of actual classroom teacher in to 20 minutes of PTV teacher and 20 minutes of actual classroom teacher. The second area of modification is the distribution of the lesson in the form of CDs so that classroom teachers can see it before entering to classroom and prepare themselves accordingly. Thirdly, the level of PTV integration was also changed from full semester (year) system in to specific topic or content system. In addition to the revision of the previous PTVP, MoE also increased the number of subjects to be broadcasted in PTV. That means; Geography is included as a subject to be transmitted through PTV. Regarding this, Girmachew (2013), in the Ethiopian Herald newspaper wrote, “Except Amharic, History and Sport subjects, Television educational program have been broadcast in ten subjects in secondary and preparatory schools across the nation” (p.1).

Due to the above complexities (changes in text books, revision of the previous PTV program and expansion of PTVP to additional subjects) anyone who is working around secondary schools can commonly hear complaints from both the teachers and students on the issue of PTVP. In the same way, my past personal experience of teaching in secondary schools for the past five years including one year teaching in the newly revised PTVP helped (initiated) the researcher to look this complain very closely. Therefore, the researcher was interested and initiated to conduct a study on this topic in Silte Zone secondary schools.

1.2. Statement of the Problem

ICT in general and ITV in particular can make learning effective and interesting if it is applied in a systematic approach and well planned manner. In addition to this, it ensures cost effectiveness in education (Shehzad, 2007). The plasma television instruction (PTVI), like any other instructional technologies can be used in teaching. However, the PTVI by itself does not bring improvements in learning. What makes it fruitful is the way we use it. In line with this, Solomon (2008) stated that, a specific technology may hold great educational potential if and only if we use it properly. Unless it is used properly, it may not have any positive impact at all learning. In short, this is to mean that, PTVP can be effective if we use it in the way it is planned to be implemented (as stated on plasma guide).

But, Gebeyehu Workineh (2013) head of educational media program professional in education, information and communication technology center during work shop held with some selected teachers from different regions concerning PTV training said;

Though plasma TV program has of great importance in filling schools gaps and assisting teachers to make teaching-learning process effective, assessment made with regard to its implementation showed that, PTV was not open in all schools as per the schedule though there is transmission (P. 1).

The above idea indicates that, PTVP implementation was not as intended even if the government spends about 80-million US dollars at the beginning and still spending 10 percent of its annual GDP on a broadband, satellite-based internet system (Samson, 2009). In addition to this, the pass rate of students on grade 10 matric exam in the study area is declining from year to year. As the report of the Zone Education Bureau informed, the pass rate of students on matric exam was 69.2%, 68.8%, 66.7%, 62% and 60.3% for the years starting from 2001 E.C to 2005 E.C respectively. Moreover, to the knowledge of the researcher, no research has been done on this topic in this zone. As a result of the above reasons, the researcher has been initiated to conduct this study on Silte zone secondary schools.

Beyond these, from the time Ethiopian government introduced plasma mode of instruction in secondary schools, many researchers conducted their study on the issue of PTV. For instance, Gara and Garkabo (2012), Abatihun (2012) and Eyasu (2011) conducted their study on effectiveness of PTVP on academic achievement of students while Kassahun and Zelalem (2005) and Seid (2011)

on the impact (use) of PTV for teaching learning process. Moreover, Abdulselem (2011) and Tesfaye (2005) conducted their study on attitude (perception) of teachers towards PTV. Furthermore, Akalewold, kassahun, Zelalem and Addis (2011) conducted their research on perception of students toward PTV lesson and status of satellite television broadcast program implementation in some selected secondary schools of Oromia, Tigray, Amhara and SNNPRS. Their study tried to treat variables like PTV lesson planning and its organization from perspective of teachers. Finally, it found out that, PTV lesson is well planned and well organized in content. That means, TV lessons scope is up to the level of students, the relevance of the lessons content was appropriate, TV lessons content responsiveness is positive for students need and negative for students with special need.

In general, the above researchers found out that PTVI has many advantages such as; changing the teaching learning positively by presenting sufficient teaching aids, organizing lessons, encouraging and motivating students to participate, enabling students to put their knowledge in to practice, using variety of methods for presentation supported by visual aids, covering the content within allotted period of time, providing equal access to students throughout the nation, integrating different methods of teaching like demonstration, problem solving and lecture depending on the content of the subject.

On the other hand, the above researchers also found out that, PTVI has some weaknesses (disadvantages) such as; Plasma teacher is too fast that do not consider the speed of students, Plasma teacher use difficult words that cannot be easily understood by students, PTV gives insufficient time for the classroom teacher involvement, it can not address (consider) the issue of visually impaired students and individual difference, PTV makes some teachers negligent, not punctual, not active, and coming without preparation.

Among many studies mentioned above almost all the researchers with the exception of Abdulselem recommended that, the application of the plasma program should continue in Ethiopians education system but it should be modified (revised) for future so that the classroom teacher and plasma teacher get the right proportional time. Accordingly, MoE revised the previous PTV in 2003 E.C and the implementation of the revised PTV was started at the beginning of 2004 E.C.

Therefore, the research gap here is to assess the current status of PTVP instruction on the newly revised PTVP because all the researches that the investigator mentioned above were done on the older program and they are not sufficient (powerful enough) to indicate the current situation of PTVP instruction. That means, they did not address the present extent (status) of effort made by classroom teachers and students to perform their role as stated in plasma guide and the effort of principals in supporting the program. Moreover, the above researchers fail to address the strengths of the newly revised PTVP such as its accessibility (existence of the lesson in the form of CDs), its flexibility (possible to use PTV in the absence of direct broadcast), responsiveness for students need (provide freedom (20 to 25 minutes) for classroom teachers and students to interact together), and level of integrating PTVI for content system (for practical contents but not for theoretical ones) rather than the whole course system.

The other reason that initiated the investigator to conduct this study on this topic is that, MoE (2010) indicated as it needs urgent research on this area by stating as follows;

Currently 71.6% of secondary schools are equipped with plasma- TV and 26.1% have access to internet services. In expanding and improving plasma-TV lesson delivery, new specifications have been made. Digitized Satellite TV lessons have been piloted and preparations are under way to broadcast these digitized education programs online, by DVD and CD. There remains urgent need to assess the impact, efficacy, and effectiveness of the provision of PTV and internet services to secondary schools (p. 18).

Due the above reasons, the researcher was initiated to conduct this study on this topic in Silte zone secondary schools. In doing so, the researcher used components of independent variables like the activity of the classroom teachers and students as major determinants of the status of PTVP instruction since they are the most responsible persons for the implementation of the program than any other. In addition to this, the extent of support provided by principals and government plays decisive role in determining status of PTVP instruction. In sum, the status of PTVP instruction can be improved if all stakeholders perform their responsibilities as summarized in the framework below.

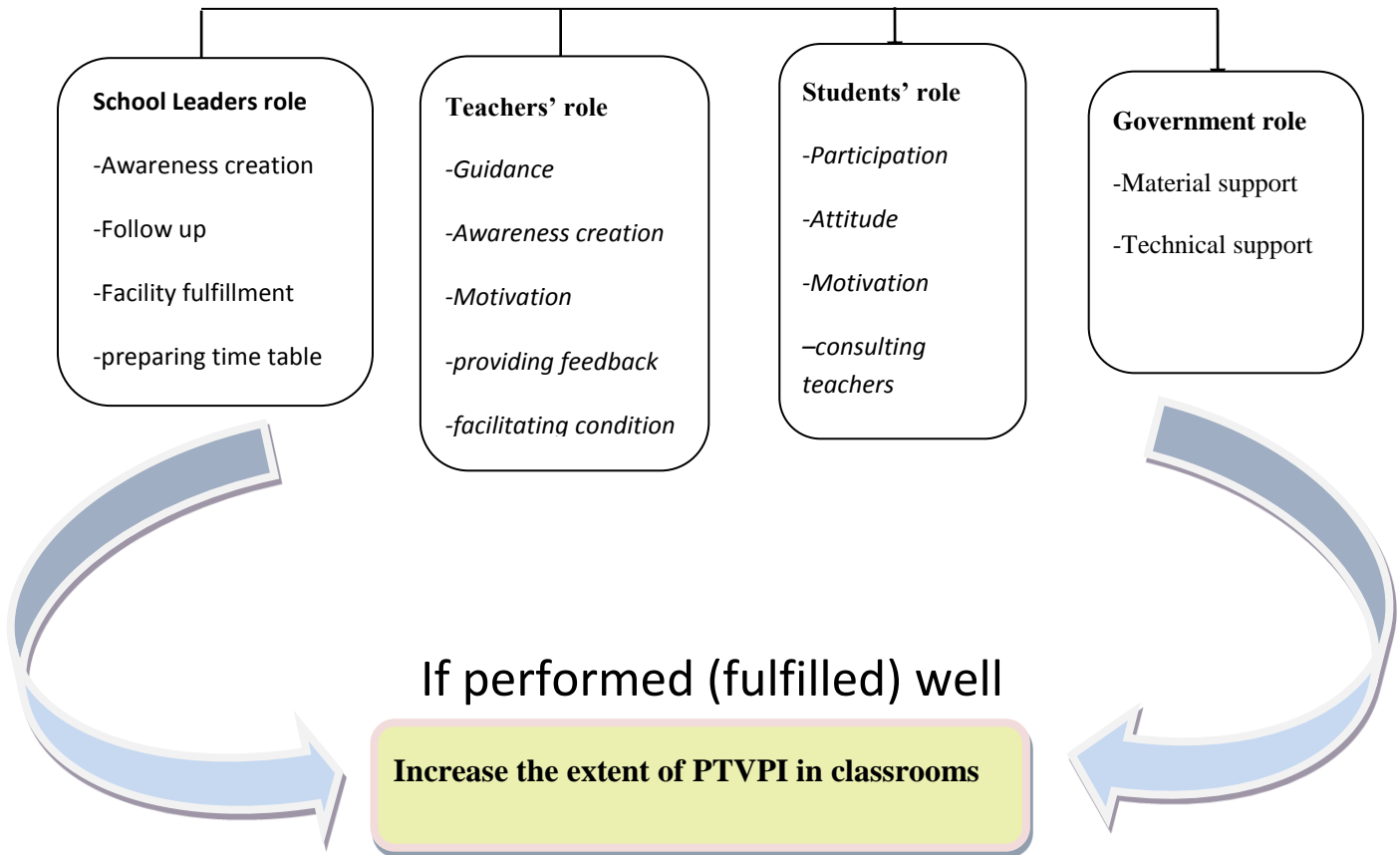


Diagram 1: Conceptual framework of the study. Modified from Technology acceptance model of Wong et al. (2008) and Peeraer & Petegem (2000).

Based on the above framework, this study was aimed in answering the following basic research questions;

1. To what extent do teachers perform their role while integrating (utilizing) PTV for classroom instruction in Silte zone secondary schools?
2. To what extent do students play their own role during PTVP instruction in the study area?
3. To what extent do principals support the newly revised PTVP instruction in the study area?
4. How often does the newly revised PTVP support teachers and students to perform their roles?
5. How does government support, school climate and teachers characteristics affect PTVPI in Silte Zone Secondary schools?

1.3. Objectives of the Study

This study has both general and specific objectives as follows.

1.3.1 General Objective of the Study

The general objective of this study was to assess the implementation of the newly revised PTVP instruction in Silte zone secondary schools.

1.3.2 Specific objectives of the Study

In line with the basic research question, this study tried to:

- ❖ Investigate the extent to which classroom teachers perform their role while utilizing (integrating) PTV for classroom instruction in the study area.
- ❖ Examine the extent to which students play their own role during PTVP instruction.
- ❖ Explore the extent to which school principals support PTVP instruction in the study area.
- ❖ Determine the extent to which the strengths of the newly revised PTVP support teachers and students to perform their roles.
- ❖ Find out the extent to which government support, school climate and teachers characteristics affect PTVPI in in the study area.

1.4. Significance of the Study

Since this study tried to assess the present status of PTVP instruction in Silte Zone secondary schools, the researcher believes that, it might have important contribution to different groups of people such as students, teachers, educational stakeholders, and others who want to conduct study on related areas as follows;

- It may provide awareness to students on importance of utilizing PTV technology for instructional purpose. In addition to this, it helps them to identify their roles and the roles of classroom teachers at different stages of PTVP broadcast time. This can be done by putting a copy of this research in the library of every schools found in Silte zone.
- Secondly, it may also provide awareness for teachers about the advantages of using PTV technology for instructional purpose. Beyond this, it may also help them to identify their roles clearly at different stages of broadcast time. Additionally, it may help them to evaluate the extent to which they perform their own role at different stages of PTV broadcast and make more effort to maximize its benefit. To maximize this benefit the investigator can put one copy of the final research in the library of every school so that they can see the final finding of the research they responded earlier during the data collection stage.
- It may provide awareness for all stakeholders of school like school principals, supervisors, woreda and Zonal education bureau workers so that they support the implementation of this

technology since the government dedicated (committed) very much to improve quality of education by spending (investing) huge amount of money on it. To make this significance more successful the researcher can provide a copy of this paper for each woreda and the zone education bureau so that they can see the status of PTVP instruction in their zone and give attention to it.

- It serves as a reference for further similar studies in research area.

1.5. Delimitation (Scope) of the Study

The study has conceptual, geographical, and time delimitations as follows. Conceptually, the study focused on assessing the status to of the newly revised PTVP instruction and factors affecting PTVPI such as government support and classroom situations. To determine its status of implementation, variables like teachers role (activity), students' role, principals' extent of support and the strengths of the program itself were investigated. Thus, this study cannot include the issue of effectiveness of PTVP on academic achievement of students. It was also periodically delimited to the degree of PTV instruction in 2006 E.C (starting from September to May) since this thesis stays for one year and the study is being conducted for the fulfillment of the thesis. Furthermore, the scope of this study was geographically delimited to 17 secondary schools found in 8 woredas and one administrative town of Silte zone because it is difficult to assess the situation on other zones found in SNNPRS due to financial and time constraint. Additionally, the study was also delimited to only secondary schools found in this Zone. This means, it does not include primary schools found under the study area because they do not have PTV program.

1.6. Limitations of the Study

Even though this study has tried to attain its objective, there were some inescapable limitations. First, the shortage of reference books and similar research works particularly on PTVP in this zone (study area) impedes the researcher from consulting more findings in the literature as well as in the discussion part. To tackle this problem the researcher used few findings of journals which were conducted on ICT which is more general and inclusive than PTVP. In addition to this, the researcher used the findings of few researchers which were conducted in other regions of the country and other countries as well.

Second, it was really difficult to get all the questionnaires back from the respondents. Because some teachers were burdened by teaching activities and others who are not busy were unwilling to fill and

return the questionnaire as per the required time. Thus, this research missed more amount of female teachers' view because 72.7% (8/11) of questionnaires which were not returned back to the researcher were provided to females. Moreover, stakeholders which were requested to provide their response through interview were not ready (happy) to give their response through tape recorder by considering the issue as a political issue. Thus, the researcher captured interview data through not taking method.

Lastly, responses (views) of other bodies like curriculum experts, policy makers, and supervisors from zonal and regional levels were important for this study but not included. As a result, this research missed the extent to which the above mentioned stakeholders provide their support for the successful implementation of the program as well as the present status of the government's commitment to support the implementation of the program in general. The researcher said this, because there are a number of obvious problems which should be solved by the government such as number of new PTVs are very few in schools, DVDs are totally absent in all schools, some channels are not totally functioning, less attention and follow up by stakeholders and etc. To tackle this problem, the researcher tried to include the views of woreda level supervisors.

1.7. Operational Definition of Terms

Some of the terms that the researcher used in this study might not be easily understood by readers. Therefore, operational definition of terms is required and the researcher put the definition of the following terms to avoid confusion from readers.

Classroom Teacher- is a teacher that is supposed to facilitate conditions for students in order to follow the direct lesson transmission from the station through PTV and remain with students in class room even after the direct transmission is over.

Educational Satellite Television-television used for broadcasting educational information from the main station to schools.

Implementation; refers the act of changing plan in to practice or the practice of plan.

Material Support – the provision of all necessary materials required to utilize PTVP such as PTVs, DVDs, generators, plasma guides, remote controls, dividers and CD lessons .etc.

Newly Revised PTVP- refers to the program that is on function starting from the beginning of September 2004 E.C to date.

Plasma Teacher: a teacher who presents the lesson through PTV from the main station.

Previous PTV (older program)-is a program that was functioning from the beginning of 1997 E.C to the end of 2003 E.C.

School Climate- means number of students in one class and sitting arrangement of students in classrooms.

Secondary School: The term secondary schools in the Ethiopia context will have four years duration, consisting of two years of general secondary school which enable students to identify their interest for further education, for specific training and for the world of work. The second cycle of secondary education and training enable students to choose subjects or areas of training which will prepare them adequately for higher education and for the world of work, which will be completed at grade 12 (MoE, 1994). Thus secondary school in this research refers to first cycle secondary schools (from 9 – 10 grades levels).

Status of PTV Instruction; refers to the degree (level) to which curriculum implementers mainly classroom teachers and students perform their roles as stated in plasma guide while integrating PTV for classroom instruction.

Students Effort-is ability of students to do activities as instructed by PTV presenter and interacting one another and with classroom teacher.

Technical Support – is the provision of training on how to operate, integrate (utilize) and give maintenance services for PTVs.

1.8. Organization of the Study

The report of this study is organized in five chapters. The first chapter deals with background of the study, statement of the problem, objectives of the study, significance of the study, delimitations of the study, operational definition of terms and limitation of the study. The second chapter presents the review of related literatures. Chapter three presents research methodology, including research design, research method, study site and sources of data, the study population, sample size and sampling technique, instruments of data collection, validity and reliability of data collecting instruments, procedures of data collection, method of data analysis and ethical considerations. The fourth chapter deals with data presentation, analysis and interpretation. Finally, chapter five summarizes the main findings, conclusions and recommendations of the study.

CHAPTER TWO

REVIEW OF RELATED LITRATURE

This chapter presents about theoretical knowledge of plasma television program instruction. The chapter is organized in to different sections like concept of instruction and instructional television, media and learning, implications for effective utilizations of ITV; factor's affecting utilization of ITV in schools and merits and demerits of utilizing ITV for classroom instruction. Each section will have strong power to provide the necessary information to conduct the study effectively as well as to develop good data collecting instruments.

2.1. Concept of Instruction and Instructional Television

2.1.1. Definition of Instruction

Instruction is defined as teaching or being taught (Sally, 1994). Similarly, Heinich, Michael, James, and Sharon (2005) defined the word instruction as the arrangement of information and environment to facilitate teaching-learning. This may be done by the learner or by the instructor. By environment we mean not only where instruction takes place but also the technology, methods, and media needed to convey information and guide the learner study.

2.1.2. Definition of Instructional Television

According to Olagunju, Salawu and Inegbedion (2008) instructional television (ITV) is defined as television that broadcasts an organized program of instruction to specified learners: to classrooms (schools, colleges and universities), and to individual viewers (usually adult education). They also refer it as any planned use of video programs to meet specific instructional goals. Similarly, Zelezna (2004) defined the word ITV as a type of television that is used for class room instructional purpose.

According to Saglik and Ozturk (2004), ITV is an effective distance education delivery system that can be integrated into the curriculum at three basic levels: the first level is single lesson programs in which ITV address one specific topic or concept, providing a lesson introduction, overview, or summary. The second one for selected unit programs in which ITV provide the content for a learning unit in the course curriculum and the third one is full course programs in which one or more ITV program may be integrated into a full semester course typically in conjunction with instructional print materials. Previously our country is following the third type of program in which

courses of some selected subjects are totally designed to be delivered by the help of PTV until the end of the year. But at this time Ethiopia is utilizing the second type in which some selected topics that focus on practical situations are delivered by PTV.

According to Willis (1995), ITV may be classified as either passive or interactive. The main difference between passive ITV and interactive ITV is that, passive ITV involves pre-produced programs which are distributed by video cassette or by video-based technologies such as broadcast, cable, or satellite whereas interactive ITV provides opportunities for viewers either with a live instructor or a participating student site. For example, two-way television 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. It is also possible to configure the system so that all student sites may view one another. Regarding this, the PTV system that Ethiopia country currently using is the passive ITV type in which only one way communication is possible.

2.2. Media and Learning

2.2.1. Meaning of Media

Medium (plural, media) is means of communication and source of information. Media is derived from Latin word meaning “between”. The term media refers to anything that carries information between a source and receiver. Its examples include video, Television, diagram, printed materials, computer program and instructors. These are considered instructional Medias when they provide message with an instructional purpose (Heinich et al, 2005).

2.2.2. Some Functions of Media in Education

According to Olagunju et al. (2008) major functions of instructional media are as follows.

1. Maximize learning by involving a number of sense organs.

The more the number of senses involved in the learning process, the more enduring the learning results. Chinese saying also support this idea by stating as follows:

I hear, I forget

I see, I remember

I do, I understand (Olagunju et al. 2008).

Moreover, Dales (1946) cone of experience supports this idea by saying, as more number of the senses are engaged (such as hearing, seeing, touching) learning increases as indicated below in figure 2.

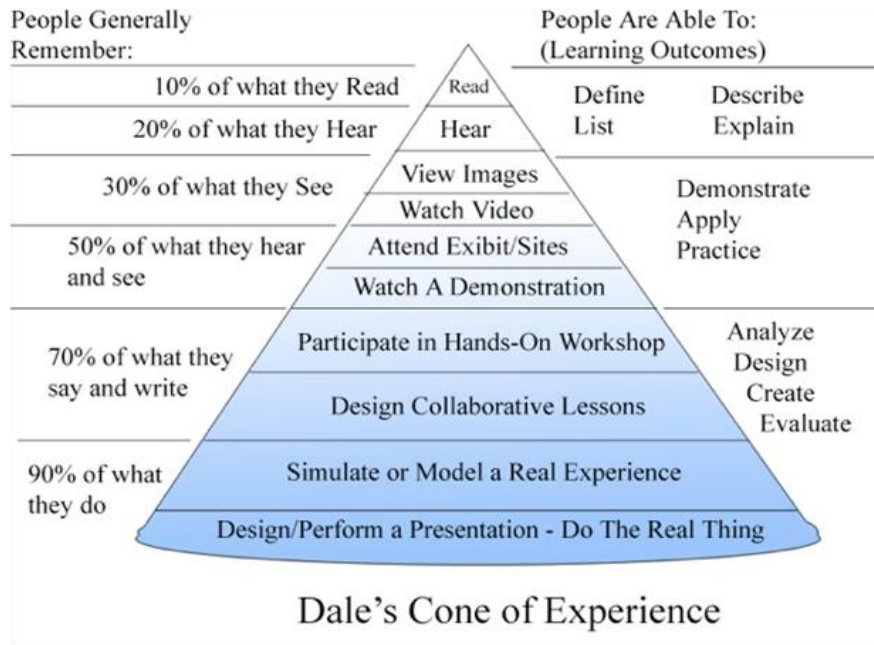


Diagram 2: Dale's cone of experience

2. Instructional materials concretize abstract concepts and ideas.
3. Instructional media help in magnifying or reducing objects for classroom use.

By means of motion pictures or television, big objects or small objects can be brought into the classroom for closer examination.

4. Experience that may not be available is provided via media.

For example, a video clip in earthquakes, wars, and flood may transport a child from the unknown to the known.

6. With the use of instructional media, individualization of learning becomes a reality.

Teachers and students can go at their own pace, rate and convenience. Video, audio cassettes and computer assisted learning have made this possible. You can record off the air some instructional programs that can aid in learning, making use of audio and video cassette recorders. You can also buy pre-recorded audio, video tapes and compact discs etc.

7. Instructional media provide a common framework of experience to a large number of learners. This is what we call the democratization of learning or equalizing opportunities for all learners, whether you are in Delta or Maiduguri, the same telecast can be beamed to all at the same time provided all other things are favorable.
8. Instructional media gain and hold the attention of learners.

2.3. Implications for Effective Utilization of ITV in Classroom

For years there were predictions that teachers, textbooks and even schools would be replaced by new teaching and learning technology (Postholm, 2006). But at present, studies shown that, ICT is a tool that offers a range of possibilities that places great demands on the teacher. For instance Spodork, (2001) stated that teachers (plasma and classroom teachers), specifically, classroom teachers, in televised instructions, are expected to function as motivators, mediators, and designers of tasks rather than mere knowledge providers/inactive receivers of information from the TV teacher. Similarly, Khan et al. (2012) stated that, although ICT has the potential to transform and improve the nature of education to a great extent the classroom teacher's role in technology rich classrooms is more demanding than ever. Moreover, Postholm (2006) stated that, ICT is tool that mediate talk between pupils, pupil & teacher, but the teacher has to function as an advisor in the classroom by organizing and structuring the activity and 'scaffolding' the pupils in dialogues with them.

The above ideas indicate that, ICT should not take over the classroom teacher's role; rather it should serve as mediator. That means the role of the actual classroom teacher while using ICT for instructional purpose is very great that determines the extent teachers use ITV for instructional purpose. In addition to the role of classroom teacher, the role of students, the role of PTV teacher and school principals is also decisive in effectively implementing PTV program. Moreover, government support and teacher personal characteristics also play decisive role on the extent of instructing learners using ICT in general and PTV in particular. Therefore, the roles of the classroom teacher, students, principals and plasma teacher are discussed turn by turn here under:

2.3.1. The Roles of Classroom Teacher

While using ICT in general and PTV in particular, classroom teachers should perform different activities at different stages of broadcast to make their teaching learning process more effective. For

example, as stated in Instructional Television (undated), before using ITV, teachers should work with their library media specialist to pre-record programs and preview the program whether it fit their curriculum objectives or not. After this, teachers should select segments of the program that will spark student interest, and demonstrate a concept. Then teachers should prepare their television and video equipment, pre-recorded video, and ensure all students will be able to see and hear the program. After this teachers should explain the purpose for viewing and raise questions to be answered at the end of the program. That means, they provide students with a goal in watching a program because it heightens their attention level and improves retention of the material they will see. In line with this, Willis (1995) wrote that, before ITV broadcast starts in classroom, teachers should introduce the program to students. Moreover, Meaza (as cited in Tesfaye, 2005) indicated that, classroom teachers should motivate his/her students by telling the specific objectives to be accomplished (achieved at the end) before broadcast of PTV starts. She also added, teachers should manage the TV well by preparing the TV sets and adjusting the volume of TV to the appropriate level.

During the broadcast time classroom teachers should actively watch the video with students. When using a pre-recorded program, they should use pause or replay segments for reinforcement and clarify unclear concepts (instructional TV, Undated). Regarding classroom teacher's activity during the broadcast time (Thevenin, 2013) also stated that, teachers should create conducive atmosphere (situations) so that students participate based on the advice given from the TV teacher. Additionally, they are expected to assist students while they are doing different activities and exercises which are requested by TV teacher. Moreover, they should answer, clarify unclear ideas and concepts (Brady, 1998) and motivate students to learn. Furthermore, teachers should check whether the learners are following the lesson silently and attentively.

According to Saglik and Ozturk (2004) teachers should provide the environment of collaborative learning, interactive group discussion for the easy and permanent learning of students with related materials. They further stated that, teachers should give the proper feedback to the students and help them to interrelate the subjects.

After Viewing the Program (broadcast) teachers should use probing questions based on the video lesson to encourage classroom discussion and follow up whether students complete an activity or

not (Thevenin, 2013). Beside this, he/she should check whether the daily specific objectives of TV lesson have been achieved or not (Willis, 1995). Moreover, they revise and sum up the days lesson.

2.3.2. The Role of Students

The role of students can also be seen at three stages before, while and after broadcast like that of teachers.

According to Meaza (as cited in Tesfaye, 2005) students must have text book, exercise book and pens. Besides, they have to listen the introduction of the program given by classroom teacher and they should also be motivated to learn before the broadcast starts.

During the broadcast time students should be self-responsible on task and should not feel sleeping, laziness, bored. They should also work on given exercise, answer questions and compare their answers with others. Also they should be motivated (not be passive recipients) and follow the lesson energetically (Willis, 1995). Students should make interaction with their teacher in order to get proper feedback on their self-directed subjects and consult to teacher for correctness and evaluation.

After the broadcast, their role is exchanging ideas, views and opinions freely with their classroom teacher. They can also ask for further clarifications and answer questions which come from classroom teacher and student themselves.

2.3.3. The Roles of Principals

School principals basically need to facilitate the provision of supportive materials like satellite TV program manual, student textbooks, teacher's guide, reference books, and audio and video cassettes (Saglik & Ozturk, 2004). Moreover, they are expected to give awareness for students and facilitate duplication and distribution of text book and schedule preparation (Willis, 1995).

2.3.4. The Roles of Plasma Teacher

According to Willis (1995) plasma teachers should perform the following activities during and at the end of program to make the lesson more effective.

2.3.4.1. During broadcast

- Integrate activities to reinforce the content presentation. These activities might include quizzes, worksheets, role-playing, and experiments.
- Vary facial expressions, tone of voice, body movements, and eye contact with the camera to enhance verbal communication.

- Motivate peer learning and support by encouraging students to work together both in and out of class.
- Review the concepts discussed in the program and clarify any misunderstandings by asking focused questions.
- Should not read the material.
- Engage students by using humor, asking questions, involving students, and praising student contributions.
- Maintain energy and dynamism to attract and hold the distant learners' attention.
- Keep lecture sessions simple and clear. To help focus viewing, indicate key points to look for.

2.4.4.2. After Following the Session (broadcast)

- Review the taped recordings of the presentation, either with technical staff, a colleague, or by yourself. Take notes for improving presentation, style, and delivery methods.
- Seek student feedback on the strengths and weaknesses of the instructional materials and the teaching strategies being used.
- Be open to new ideas and delivery techniques for improving instructional effectiveness.

2.4. Factors Influencing the Utilization of ITV

According to Shan (2013) and Khan et al. (2012), factors influencing the implementation of ICT in schools can be classified as external factors and internal factors. Some of the external factors include technology availability, accessibility (lack) of ICT equipment, lack of time to plan for instruction, lack of technical and administrative support, school climate, lack of resource, faculty teaching load and management routine, and pressure to prepare students for national entrance exams. According to them some of the internal factors that influence implementation of ICT in schools include: understanding of the technology use (beliefs about teaching with the technology); teachers and students attitudes toward technology integration; lack of motivation to use ICT; self-confidence and knowledge; technology skills; readiness to use ICT; and technology self-efficacy.

In line with this, Gill and Dalgarno (2008) reviewed several studies on pre-service teachers' preparedness to use ICTs in the classroom. Accordingly, they found and classified factors affecting the implementation of ICT as non-manipulative and manipulative school and teacher factors. As to them non-manipulative factors are those factors that cannot be influenced directly by the school, such as age, teaching experience, computer experience of the teacher and the availability of external

support for schools. On the other hand, manipulative factors refer to the attitudes of teachers towards teaching and ICT, ICT knowledge and skills of teachers, commitment of the school towards the implementation process and availability of ICT support.

Furthermore, Andoh (2012) classified factors that influence teachers' use of ICT in school in to Personal, school and technological levels. As to him personal level factors that influence teachers' use of ICT include Teachers' feelings, knowledge and attitudes. On other hand school level factors that influence teachers' adoption and integration of technologies into their classrooms are support, funding, training and facilities. On the technological level, for successful adoption and integration of ICT into teaching, teachers must perceive the technology as better than previous practice; consistent with their existing values, past experiences and needs; ease to use, can be experimented with on a limited basis before making a decision to adopt and finally the results of the innovation are visible to others. The availability of activities in the teaching materials and on the TV screen is the other crucial element in televised instructions. Moreover, the program cannot be effective unless support materials, such as satellite TV manual, students' text books, and teacher's guide are provided. These support materials can be provided by the school, parents or government. In addition, classroom settings, finance, acceptance of the technology, and technological and theoretical knowledge of the technology are the core elements to employ the telecasted education program effectively.

Even though different scholars classify factors affecting implementation of ICT in to different categories; I divided them in to three major classes for the sake of convenience as discussed below.

- a. Government support
- b. School climate
- c. Teachers personal characteristics

2.4.1. Government Support

Besides the nature of activities and roles of key practitioners/implementers, it is believed that ITV programs cannot be effective unless supportive services are provided by the government. In line with this, Shanfu (2013) stated that, the higher the technical and administrative support structure and technology availability, the higher the technology integration efforts are made by teachers to use it. Regarding this, Andoh (2012) wrote that, effective adoption and integration of ICT into teaching in schools depends mainly on the availability and accessibility of ICT resources such as

hardware, software, etc. he further stated that, if teachers cannot access ICT resources, then it is obvious that they will not use them. That means access to ICT infrastructure and resources in schools is a necessary condition to the integration of ICT in education. Therefore, Schools that utilize ITV need to be provided with the necessary support services such as, supervision (inspection), training, maintenance, experience share, teachers and students guide, CDs, DVDs and the like from broadcasters and/or associate organizations (regional, zonal or woreda bodies).

In addition to material support, technical support on how to operate, install, and give maintenance service should be given by the government to teachers to enhance their confidence of utilizing ITV in front of students.

2.4.2. Class Size and Seating Arrangement

Even though there is a debate among politicians, teachers, parents and students on how to create a good learning environment where all students can fulfill their maximum potential regarding class size, numerous studies showed that students in small class size benefit more. For instance, study conducted by Deutsch (2003) showed that students in smaller classes tend to have less discipline problems, spend more time engaging in learning tasks, receive more teacher attention, and be more active participating in the class. Additionally, study conducted by Fierros (2008) showed that smaller class size has fewer distraction and the students there received more one-on-one attention from the instructor. Additionally, he found out that smaller size classes result in better learning due to less discipline problems, fewer interruptions, students ask more questions and they develop a closer relationship with their teacher.

Similarly, class sizes larger than thirty tended to be more dominated by lectures and were less likely to engage students in group work compared to classes smaller than ten. Also, peer tutoring was more frequently observed in smaller classes (Wyss et.al, 2007).

Large sized class form large number of columns and rows in class and hence it affects sitting arrangement of students which intern affects the teaching learning process. Regarding sitting arrangement Fierros (2008) found out that, seating arrangement does affect students' learning in terms of student-teacher interactions. When the seating is not well arranged, it can affect the teacher to reach the students in an effective way. That means students seating in the first and the last rows in a class where there are longer rows and wider columns cannot be treated equally because it is

difficult for instructors to move through the rows because of students' backpacks block the passageways.

2.4.3. Teacher's (Personal) Characteristics

In addition to the role of PTV teacher, classroom teacher, students, principals and government support, the success of PTV program instruction is also largely depends on teachers (personal) characteristics such as attitude towards technology, their age, educational experience, gender, experience of using technology for educational purpose, confidence to use the technology and skill (Andoh, 2012).

Attitudes

Teachers that have positive attitude towards technology utilize most often times than those who have negative attitude and feel non comfort to use it (Shanfu, 2013). Similarly, study conducted by Andoh (2012) reveled that teachers' that have positive attitude towards the use of educational technology can easily adopt and integrate ICT in to teaching and learning process than those who have negative attitude towards it. Moreover, Afshari et.al (2009) found out that participants with negative computer attitudes were less skilled in computer use and were therefore less likely to accept and adapt to technology than those with positive attitudes. Therefore, they concluded that changing individuals' negative attitudes is essential for increasing their computer skills. Therefore, if teachers want to successfully use technology in their classes, they need to possess positive attitudes to the use of technology.

Educational Experience

Teachers with fewer years of experience were more likely to use computers in their classes than teachers with more years of experience and he concluded that this may be due to the fact that new teachers have been exposed to computers during their training and therefore, have more experience using this tool (Afshari, 2009). Similarly, Andoh (2012) found out that experienced teachers are less ready to integrate ICT into their teaching than less experienced ones. In opposite Niederhauser & Stoddart (as cited in Afshari et al. 2009), reported that experience in teaching did not influence the use of computer technology in teaching. As to the researchers feeling teachers' skill of operating PTV increases as their experience increases. So, the researcher is supporting the findings of Andoh and Afshari as explained earlier.

Gender

Male teachers used more ICT in their teaching and learning processes than their female counterparts because female teachers' have low levels of computer use due to their limited technology access, skill, and interest (Andoh, 2012). Regarding this, Totter (2006) found out that women were more strongly influenced by subjective norm and perceived behavioral control and they adopt very different decision process in evaluating new technologies. Towards this, the researcher would like to add gender cannot have influence on the extent of integrating PTV if both females and males get equal opportunities of technology access and skill during training at universities.

Age

Older teachers frequently use computer technology in the classrooms more than the younger teachers (Andoh, 2012). The major reason could be that the older teachers having rich experience in teaching, classroom management and also competent in the use of computers can easily integrate ICT into their teaching. In opposite, Totter (2006) found out that age correlated negatively with the attitude towards ICT utilization in teachers. Similarly, Dereje Matiwos (2013) is a School Plasma Transmission Coordinator and English Teacher in Hawassa Tabor secondary school of SNNPRS during workshop prepared by Education Information Communication Technology Center for experience sharing regarding PTV said, "Especially, old aged teachers have plasma phobia ." as reported by Daniel Birhane on Monday, March 11, 2013 at 12:42 am. But to the researchers knowledge teachers skill and competence of operating and utilizing PTV increases as their age increase. This indicates that, the researcher is slightly supporting Andohs idea. In another way teachers interest of using PTV decreases as their age increase. So teachers with older ages might use PTV more than younger teachers if they are given different incentives that motivate their interest of using PTV.

Skill and Competence

Educators with higher levels of skill, knowledge, and competence of tools would exhibit higher levels of technology integration in the classroom (Afshari, 2009). He further stated that, positive computer (ICT) experience of the teacher educator have a direct positive influence on the innovative use of ICT by the teacher. Similarly, Andoh, (2012) found out that lack of Knowledge and Skill regarding the use of ICT tools and software has also limited the use of ICT tools in teaching learning situation by teachers.

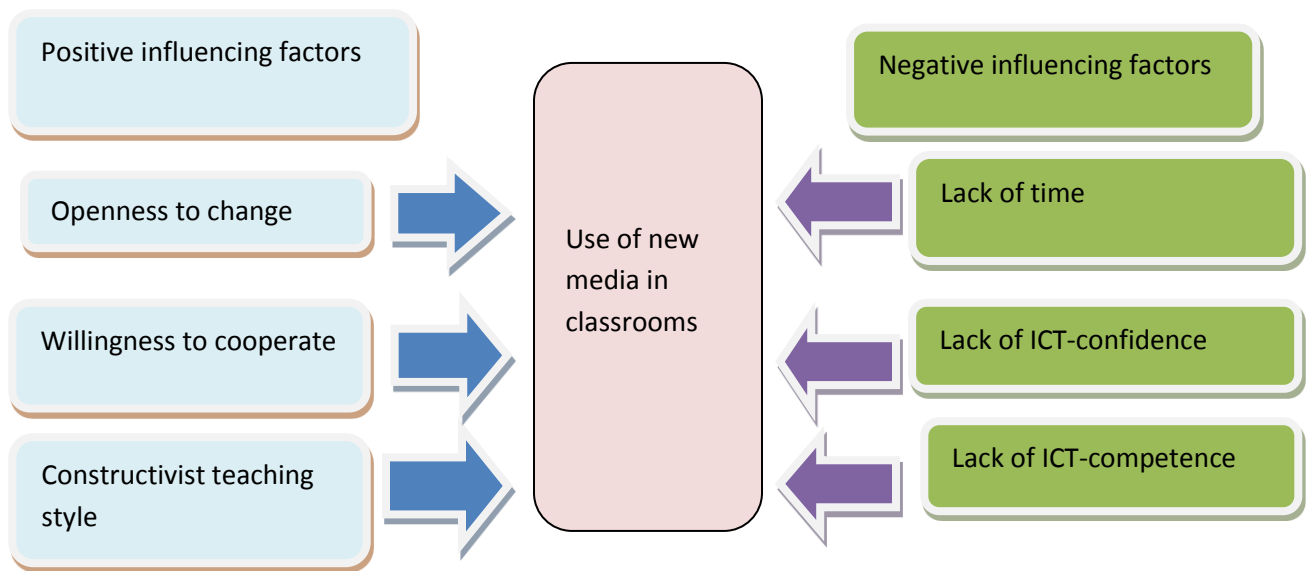


Diagram 3: Teachers’ characteristics influencing status of ICT use in classroom.

Source: Totter A, Stutz, D and Grote, G. (2006). Identification of Factors Influencing the use of new Media in Vocational Training.

2.5. Merits and Demerits of Utilizing ITV for Instruction

2.5.1. Merits of ITV

Though instructional technologies in general and ITV in particular have widely been used in teaching-learning situations, different scholars have argued differently on their use. For instance, Khan, Hassan & Clement (2012) argue that ICT can facilitate instruction and learning process. In addition to this, ICT can also serve as an important tool for realizing a new paradigm of learner-centered education that better supports learners’ needs through differentiated and personalized instruction.

Evoh (2007) stated that, the advantages of integrating ITV in secondary education in Africa is to improve learning by, raising technological literacy among students; expanding educational access to remote communities that were formerly deprived of education due to distance, culture, economic needs or gender disparities; and to prepare students for the world of work.

In addition to the above advantages, some local and international researcher’s listed the advantages of ICT in general and ITV in particular as follows;

- It support student-centered and self-directed learning(Shan Fu, 2013; Seid, 2011)
- Produce a creative (powerful) learning environment (Shan Fu, 2013;Afshari, 2009)
- Improve teaching and learning quality (Shan Fu, 2013)
- It presents sufficient teaching aids (Kassahun & Zelalem, 2005; Abatihun, 2012)
- It completes content within the allotted period of time (Kassahun et. al, 2011; Abatihun, 2012).
- It enables students to develop new ideas and exchange ideas with their classmates (Seid, 2011).
- It provides equal access to students throughout the nation (Kassahun et al. 2011;Negash, 2008;Getnet, 2008; Gara & Garkabo, 2012)
- It integrates different methods of teaching like demonstration, problem solving and lecture depending on the content of the subject (Eyasu, 2011;Kassahun et al. 2011; and Abatihun, 2012)
- It reduces workload of the classroom teachers (Abatihun, 2012)
- It updates teachers' competence on the subject matter they teach (Abatihun, 2012)
- It presents complex and abstract concepts in a simplified manner (Abatihun, 2012)

2.5.2. Demerits of ITV

Though the proponents of instructional television underlined the importance of the technology, ITV has been target of many criticisms. For instance, Barnes (1997) argued that, ITV provides a one-way communication flow from the broadcaster to the hearer or viewer. Thus, it eliminates a fundamental feature of spoken language; dialogue and interactivity.

As stated by Zelezna (2004) the most problem related to ITV is expensiveness of broadcast quality to create because Video production is time consuming that requiring relatively sophisticated production facilities and equipment. In addition to this, choosing to interactively participate in an ITV program may require specialized equipment, facilities, and staffing. The second serious short coming of ITV program is its courses use a mass media approach to instruction aimed at the average student. As a result, ITV is ineffective in serving students with special needs. The third major shortcoming related to ITV is its difficulty to revise and update if it is completed (produced) once and its production also requires professionals. When ITV is used passively (without interaction) its instructional effectiveness can be limited.

In addition to the above ideas, local research findings also support the weakness of PTVI by stating as follows;

- ❖ It fosters one way communication from plasma teacher to students (Seid, 2011; Negash, 2008).
- ❖ It cannot consider individual difference among students (Seid, 2011; Negash, 2008; Kassahun et al. 2011).
- ❖ It is not flexible and costly to address the television to all schools of the country (Seid, 2011 and Getnet, 2008)
- ❖ The medium is unfamiliar in developing countries (Seid, 2011)
- ❖ It does not give adequate time for the classroom teacher to interact/communicate with his/her students (Kassahun et al. 2011; Eyasu, 2011; Brook, 2006).
- ❖ It makes some teachers negligent, not punctual, not active, and coming without preparation (Kassahun & Zelalem, 2005).
- ❖ The students cannot cope up with the speed of PTV (it is too fast) (Abatihun, 2012; Kassahun et al. 2011; Eyasu, 2011; Seid, 2011; Getnet, 2008; Negash, 2008; Kassahun & Zelalem, 2005).
- ❖ The students cannot understand the language and accent of PTV teacher (Abatihun, 2012; Getnet, 2008)
- ❖ It makes the classroom teacher idle (Abatihun, 2012)
- ❖ It prevents the classroom teacher from becoming familiar with his/her students (Abatihun, 2012).
- ❖ It does not allow the teachers to revise, paraphrase and summarize the lesson (Abatihun, 2012; Brook, 2006).
- ❖ It does not give adequate time for the students to take notes and to do class work/exercises (Abatihun, 2012; Kassahun et al. 2011; Eyasu, 2011; Seid, 2011; Getnet, 2008; Negash, 2008; Kassahun & Zelalem, 2005; Brook, 2006).

CHAPTER THREE

METHODOLOGY

This part of the research presents the methodological aspects of the research, which includes research design, research method, study site, source of data, study population, sample size and sampling techniques, data collecting instruments, data collecting procedure, method of data analysis and interpretations, validity and reliability of data collecting instruments and finally ethical considerations. Each part is discussed in detail one after the other here under;

3.1. Research Design

Although the term research design is often used in all kinds of researches, different definitions have been forwarded by scholars. For instance, Adams, Khan, Raeside and White (2007) defined research design as blueprint for fulfilling research objectives and answering research questions. Similarly, Kothari (2004) defined research design as a plan that specifies which approach will be used for gathering and analyzing the data. These definitions tell us that, research design is broader in scope that consists the ways of gathering and analyzing data to answer the basic research question. Thus, in this study, the researcher employed descriptive design because it enable the researcher to make investigation with narration of events and drawing of conclusions based on the information obtained from relatively large and representative samples of the target population (Kothari, 2004). Additionally, descriptive research design aims to describe behaviors and to gather people's perceptions, opinions, attitudes, and beliefs about a current issue in education (Kumar, 2006).

3.2. Research Method

Like research design different scholars defined research method differently. For instance, Dawson (2002) defined research methods as tools used to collect data such as questionnaires or interviews. Similarly, Neville (2007) defined research method as the various specific tools or ways data can be collected and analyzed, e.g. a questionnaire; interview; observation checklist; data analysis software etc. So, the above definitions tell us that, research method refers to the instruments that researchers utilize to collect data necessary for the study. Therefore, the researcher used survey method to collect quantitative data and interview to collect qualitative data (Muijs, 2004). By supporting this, McColl et.al (2001) suggested that, survey method provides a quantitative or numeric description of trends, attitudes, or opinions of a population by using questionnaires or interviews for data

collection with the intent of generalizing from a sample to a population. In doing so the researcher gave more emphasis to quantitative data. This is not to mean that, qualitative data is not important for this research. But to mean that, qualitative data is incorporated in this study to triangulate the quantitative data so that it will be powerful enough to describe the situations of the issue under investigation.

3.3. Study Site and Source of Data

3.3.1. The Study Site

Silte Zone is one of the 14 Zones and 4 special woredas found in SNNPRS of Ethiopia. Based on the information obtained from the Central Statistical Agency of Ethiopia, this Zone has total population of 750,398, of whom 364,108 are men and 386,290 women (Census, 2007). Silte Zone is bordered on the south by Alaba special woreda, on the south west by Hadiya Zone, on the north by Gurage Zone, and on the east by Oromia regional state (See the map on appendix J). Worabe is the capital city of this zone. It is found at around 174 KM distance from Addis Ababa. Silte Zone comprises eight woredas and one administrative town; Namely, West Azernet Berbere, East Azernet Berbere, Halicho Woriro, Silti, Hulbarag, Dalocha, Lanfro, Sankura and Worabe administrative town respectively.

3.3.2. Sources of Data

To make the study more effective, the researcher collected primary data from students, teachers, principals, and secondary school supervisors by using questionnaire, interview and observation checklist. That means, the investigator collected information regarding the role of classroom teachers and students from both classroom teachers and students by using questionnaire. In addition to this, questionnaire was used to gather data related with the extent to which the strengths of the newly revised PTV support both the teacher and students to perform their roles and factors affecting PTVPI in the study area from both teachers and students. Moreover, information's related with follow up whether teachers instruct students by using PTV or not and facility fulfillment (material and technical support) from school principals and woreda level supervisors was collected through interview. Furthermore, observation checklist was used to collect information's related with classroom setting and the extent to which students and teachers perform their roles at different stages of PTV broadcast. Thus, the decision to use these subjects as a source of primary data is based on the expectation that they have better information (experience) concerning PTV and its implementation.

3.4. Population of the Study

Population is any set of people or events from which the sample is selected and to which the study results is generalized (Israel, 1992). Similarly, Castillo (2009) defined research population as well-defined collection of individuals or objects known to have similar characteristics.

Even though scholars defined the concept population differently, it refers to collection of individuals or objects that share common characteristics (behavior) from which samples are taken to conduct the study and to generalize its finding at the end. Therefore, the population of this research included all concerned staffs in all secondary schools of Silte Zone; specifically, secondary school teachers teaching subjects broadcasted through PTV (318), Students (10890), principals (41), and woreda level secondary school supervisors (9), forming a total of **11,258**.

3.5. Sample Size and Sampling Technique.

According to Fellegi (2003), a sample is a subset of a population that is used to represent the entire group as a whole. This means, sample is simply the subset of population that allows the researchers to conduct the study on individuals from the population so that the results of their study can be used to derive conclusions that applies to the entire population. Therefore, the researcher selected 6 woredas from the total of 8 woredas and one administrative town by using stratified sampling. That means, the investigator put 8 woredas and one administrative town in 3 strata based on geographic location and selected two woredas from each strata by using proportional stratified random sampling technique. Accordingly, Silti, Alichu Woriro, West Azernet Berbere, Dalocha, Sankura and Hulbarag woredas were selected as a sample. Among the 6 selected woredas; Silti, Alichu Woriro, West Azernet Berbere and Dalocha woredas have 4, 2, 2 and 2 secondary schools respectively. So, the investigator took 2 secondary schools from the 4 schools found in Silti woreda and only one secondary school from Alichu Woriro, West Azernet Berbere and Dalocha woredas by using proportional random sampling technique. But, the remaining two woredas namely, Sankura and Hulbarag have only one secondary school each. So, the researcher took both secondary schools by using available sampling technique. Therefore, total of 7 (58.3%) secondary schools from 12 secondary schools found in the sample woredas were selected by using combination of both proportional random and available sampling techniques. This is done to give equal opportunity for each woredas located in the study area. The decision to take only 7 secondary schools for this study is based on the researcher's personal judgment to reduce budget cost, reduce field time, and reduce huge data in to manageable form because the selected amount is sufficient to make generalization

based on the finding since it is above 30% of the total schools found in the study area. Regarding this, Cohan and Manion (1994:89-90) noted that, a sample size of 30% from the population is appropriate if the numbers of population is known.

Accordingly, Silti, Gerbi Ber, Kutare, Lera, Dalocha, Sankura and Hulbarag secondary schools were selected as a sample from the above mentioned woredas. After this, the next step is selecting sample teachers, students, principals and supervisors representing each sample secondary schools.

Since the number of students and teachers in each school is very large and it is difficult to manage, the researcher used Krejcie and Morgan (1970) formula that determines appropriate size of sample for large population. The formula is attached on appendix G. According to the formula, the representative number of students and teachers for this study was computed and obtained to become 371 and 173 respectively. But the total numbers of teachers teaching subjects that are broadcasted through PTV in the above selected 7 secondary schools are 20, 8, 21, 27, 27, 15, and 12 respectively forming a total of 130. Therefore the researcher used available sampling technique and took all these teachers as a sample.

To determine the numbers of sample students, the investigator calculated 3.41% of total population because 371 is 3.41% of 10890. Finally, the researcher took 3.41% of students from each secondary school. The calculation is attached on appendix H. Based on the calculation sample size of students in each secondary school was computed and obtained to become 33, 4, 34, 11, 16, 34, and 28 in Silti, Gerbi Ber, Dalocha, Hulbarag, Sankura, Lera, and kutare secondary schools respectively forming a total of 160. Finally, the researcher used sections (class) as stratum and selected 92 students from 46 sections of grade 9 and 68 students from 34 sections of grade 10. This means, two students are selected from each sections found in the sampled schools.

Regarding the number of principals, Silti, Daloch, Lera and Kutare secondary schools have three principals each. So, the researcher selected two principals (main principal and academic principal) from each school by using purposive sampling technique because academic principal is responsible for teaching learning processes and the main principal is generally responsible for every activities taken place in the school compounds. So, the issue of PTVP concerns both academic and main principals. But, the third principal (administrative principal) is not included in this study because he is assigned for administrative workers such as librarians, secretaries, lab technicians and this issue do not concern him that match. Moreover, Hulbarag and Sankura secondary schools have two

principals each. As a result, the researcher took both principals from each school by using available sampling technique. Furthermore, one principal found in Gerbi Ber secondary school was included in the sample through available sampling technique.

Regarding supervisors, each woreda has only one supervisor providing a total of 6 supervisors because the 7 selected secondary schools are located in 6 different woredas. Therefore, the researcher took all the principals by using available sampling technique.

Table 1: Summary of Sample size and Sampling Technique

Note. T.P represents total population and S.S represents sample size inside the table below.

	Name of woreda	Name of school	Students		Teachers		Principals		Supervisor	
			T.P	S.S	T.P	S.S	T.P	S.S	T.P	S.S
Silte Zone	Silti	Silti	966	33	20	20	3	2	1	1
		Gerbi Ber	130	4	8	8	1	1		
	Sankura	Sankura	471	16	15	15	2	2	1	1
	Alicho Wiriro	Kutare	835	28	21	21	3	2	1	1
	Hulbarag	Hulbarag	308	11	12	12	2	2	1	1
	Dalocha	Dalocha	1000	34	27	27	3	2	1	1
	West Azernet Berbere	Lera	1000	34	27	27	3	2	1	1
Total	6	7	4710	160	130	130	17	13	6	6
Sampling technique	Proportional Stratified random	Simple random & Available	Proportional Stratified Random		Available		Purposive & Available		Available	
% of samples taken	66.7	58.3	3.41		100		76.5		100	
Total population of the study = 11,258 and total sample of the study = 309										

3.6. Instrument (tool) of Data Collection

In order to collect primary/first-hand data the researcher used three data collecting instruments. These are;

3.6.1. Questionnaire

In this study, the investigator preferred (used) questionnaire for this study because it is the most flexible of tools and possesses a unique advantage over others in collecting both qualitative and quantitative information (Kumar, 2006). Secondly, according to (Kothari, 2004), questionnaire is convenient to acquire necessary information from large number of study subject within short period of time. Moreover, questionnaire is low cost even when the universe is large and widely spread geographically. Therefore, the researcher used both close ended and open ended questionnaires containing 47 items to collect both quantitative and qualitative data from students and teachers regarding their role at different stages of PTV broadcast and factors affecting PTVPI. In doing so, 10 questions were adapted by making slight modification from the research works of Akalewold et. al (2011) while the remaining 37 questions were adopted by the researcher under close guidance of advisors. Questionnaire of students was translated in to Amharic so that they can understand the message in better way and provide their response.

3.6.2. Interview

The second data gathering instrument used in this study was interview. It was conducted to get deep understanding (data) about the study in the school that cannot be acquired through questionnaire or observation alone. That means, information's related with management/follow up whether teachers and students utilize PTV during their classroom instruction as intended or not was collected through it. Additionally, information's concerning distribution of materials supporting the implementation of PTV and technical support such as short term training for teachers to update PTV operation skills was collected through it. Moreover, interview was prepared to gate in-depth information so that it will enrich and validate the information gained through questionnaire and observation. As a result, semi-structured interview containing 6 items was prepared and conducted to both principals and secondary school supervisors. Regarding its source all items were prepared by the researcher under close guidance of advisors.

3.6.3. Classroom Observation

Gathering information through observation gives a direct experience and it makes possible to study certain teaching process and teachers' behaviors as they actually occur. As a result the third type of data gathering instrument that was used in this study was class room observation. The reason for employing classroom observation is to get additional information regarding the issue under investigation and to consolidate the information gained through interview and the questionnaire. Therefore, classroom observation was conducted to get deep (insight) information concerning the activities of classroom teachers and students at different stages of PTV instruction like before, during and after PTV broadcast. In addition to this, it was employed to see the natural environment (the classroom situation including plasma TV setting and its accessibility, accessibility of the plasma lesson in the form of CDs, accessibility of DVDs, broadcast quality and facilities like seating arrangement of students and availability of chairs/tables). Thus, the researcher prepared 23 items in the form of checklist and observed 3 sections per school. That means, the investigator selected the 3 sections randomly from both grades and observed a total of 21 sections in the 7 selected secondary schools for 40 minutes in each section. Regarding the source of items, 9 items were adapted from Akaledwolde et.al (2011) by making slight modification and the remaining 14 items were prepared by the researcher under close guidance of advisors and expertise.

3.7. Procedures of Data Collection

In order to collect the necessary information (relevant data) from the sample units, the researcher undergoes through a series of data gathering procedures. First, the researcher took authorization paper from Jimma University. Then after, the researcher went to Silte Zone education office for additional authorization paper that helps him to go to woreda education offices. After receiving it, the researcher went to Worabe secondary school to pretest the instruments of data collection. After calculating and checking the reliability of questionnaire and making some modifications on it the researcher went to the education bureau of the six selected sample woredas one after the other. After taking the authorization paper from woreda education bureau, the researcher directly went to schools. Soon, the researcher arrived schools; communicated the school directors and started to elect participants of the study in the manner indicated under topic of sample size and sampling technique. After this, the researcher introduced the objective/purpose of the study and distributed the questionnaire to students and teachers. Besides, the investigator conducted classroom

observation and interview for concerned bodies. Finally, the researcher collected the data and gave them great appreciation for their participation (cooperation) in this study.

3.8. Method of Data Analysis

The data for this study was analyzed both through descriptive and inferential statistics. To this end percentage, mean and standard deviation (SD) were used among descriptive statistics while independent sample T-test and one way-ANNOVA were used among the inferential statistics. That means, percentage was used to analyze the background information of the respondents while mean & standard deviation were used to analyze the data obtained through close ended questionnaire from both students and teachers for the issue under investigation. Moreover, the investigator used independent sample T-test to test whether there is significant difference between the response of teachers and students while one way ANNOVA was used to find out whether significant difference exists between teachers response concerning level of PTVP integration due to their gender and age variation. Quantitative data that was collected through observation checklist was analyzed by using frequency counts and mean. The qualitative data that was collected through semi-structured interview and open ended questionnaire were analyzed by organizing, categorizing and forming themes based on their major concept (research question). To make the analysis of interview data more easier, the researcher transcribed and coded the data and finally used it to consolidate the data analyzed from questionnaire so that it enrich the quantitative phase. Table 2- bellow shows the summery of basic research question, source of data, instrument of data collection and its method of analysis.

Table 2: Summary of basic research question, its source of data, its instrument of data collection and its method of analysis.

Key: **S.D**- is standard deviation, **OWA**–is one way ANNOVA, **ISTT**-is independent sample T-test.

Basic research question	Source of data				Tool of data collection			Method of analysis					Quantitative
	Students	Teachers	Principals	Supervisors	Questionnaire	Interview	Observation	Descriptive			Inferential		
								Percent	Mean	S.D	ISTT	OWA	
1. To what extent do teachers perform their roles while utilizing PTV for classroom instruction?	X*	X*			X*		X*		X*	X*	X*		
2. To what extent do students play their roles while utilizing PTV for instruction?	X*	X*			X*		X*		X*	X*	X*		
3. To what extent do principals support PTVPI?	X	X*	X*	X*	X*	X*			X*	X*	X*		X*
4. To what extent does the newly revised PTV support teachers and students to perform their roles?	X*	X*	X		X*	X			X*	X*	X*		
5. What factors affect PTVPI in Silte Zone Secondary schools?	X*	X*	X*	X	X*	X*	X	X	X*	X*	X*	X	X

Note; single **X** indicates less emphasis and **X*** indicate more emphasis for the indicated criteria.

After completing the analysis, interpretations of data obtained through close ended questionnaire concerning classroom teachers, students and principals’ extent of performing their roles were made for five point scale measurements based on the following mean score results.

- 1. 0.00 – 0.49 = Never
- 2. 0.50 – 1.49 = Rarely
- 3. 1.50 – 2.49 = Sometimes (moderately)
- 4. 2.50 – 3.49 = Usually
- 5. Above 3.50 = Always

In similar manner, data obtained through classroom observation regarding classroom teachers and students’ extent of performing their roles at different stages of PTV broadcast time was also

interpreted based on the above scales. (See appendix I for analysis of data obtained through observation checklist).

3.9. Validity and Reliability of Data Collecting Instruments

Checking the validity and reliability of data collecting instruments before providing it to the actual study subject is important.

3.9.1. Validity

Validity is the extent (degree) to which the instrument measures what it is intended (supposed) to measure (Neville, 2007) and (Adams et al. 2007). According to Phelan and Wren (2005), validity refers to how well a test measures what it is purported to measure. Thus, to ensure (confirm) the validity of the instruments, the researcher performed the following activities;

First of all, the investigator prepared the instrument in accordance with review literature under close guidance of advisors and experts such as school PTVPI coordinators and IT teachers. Additionally, the researcher provided it to friends (colleagues) to read it through and comment (see) if there are any ambiguities which the researcher have not noticed. Finally, the researcher carried out pilot study on Worabe secondary school which is complementary to sample secondary schools to pre-test the instrument. The respondents of the pilot test were not included in the actual study. Thus, it was conducted on 15 teachers and 30 students. The rationale behind conducting pilot test were; first to ensure whether the questionnaire is clear to respondents and it can be completed in the way the researcher wish. Secondly, to check whether there is wording of the questions. The third purpose of pilot test was to check whether the sequence, length and layout of the questionnaire are okay or not. After the distributed questionnaires were returned from pilot study some necessary modifications (improvements) were made on few items. For example, 6 questions which were found unnecessary were completely cancelled (rejected) and 9 unclear questions were modified.

3.9.2. Reliability

Like validity reliability is also defined differently by different scholars. For example; Reliability is the consistency of instrument across time and different individuals (Creswell, 2009). Similarly, Phelan and Wren (2005), defined reliability as the degree to which an assessment tool produces stable and consistent results. These definitions show us that, the term reliability in research means "repeatability" or "consistency". A measure is considered to be reliable if it gives us the same result again and again. Regarding this, George and Mallery (as cited in Jemal, 2013) suggested that, the Cronbach's alpha result >0.9 is excellent, $0.8-0.9$ is good, $0.7-0.8$ is acceptable, $0.5-0.6$ is

questionable, <0.5 is poor. Accordingly, the researcher found the coefficient of Alpha (α) to be 0.84 for teachers and 0.82 for students' questionnaire which is regarded as good by George and Mallery. The table below indicates the computed reliability coefficient of the pilot test.

Table 3- Reliability test results with Cronbach's alpha

No	Variables that indicate status of PTVP instruction	Number of items	Reliability coefficient	
			Teachers	Students
1	Teachers role (activity)	10	0.85	0.82
2	Students role (activity)	9	0.79	0.81
3	Principals role	5	0.81	0.75
4	Strength of the revised PTVP	8	0.86	0.87
5	Factors affecting PTVP instruction	12	0.89	0.84
Average reliability result			0.84	0.82

3.10. Ethical Consideration for Research

Our research would not be possible without the help and co-operation of other people. If we expect people to continue helping us, we should treat them with honesty, respect and disruption to a participant's life should be kept a minimum because responding to an interviews and filling of questionnaires requires significant time and energy and its participation could disrupt the respondents' regular activity. This indicates that, ethical consideration plays a great role in all research studies and all researchers must be aware (take care) of it.

Marshall (1998) defined research ethics as the application of moral rules and professional codes of conduct to the collection, analysis, reporting, and publication of information about research. Similarly, Resnik (2011) defined the term ethics as a method, procedure, or perspective for deciding how to act and for analyzing complex problems and issues. Therefore, the investigator tried to make a number of ethical considerations during the study. First, the researcher explained the objectives and significance of the study to the respondents and encouraged them to participate voluntarily. Secondly, the researcher also ensured them as the information they provided will be only used for the study purpose and it cannot be stored, categorized and reported by using their names and their specific addresses (Anonymity). Third, the respondents were assured about the information they provided will be kept confidential (not disclosed to the third Party). To ensure these, the researcher put an opening introductory letter that request respondents' cooperation to provide the required information for the study. In doing so, the introductory letter was framed in a manner that ensure them anonymity and confidentiality of the information that they provided.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF THE DATA

This chapter presents the analysis and interpretation of the data gathered by different instruments, mainly questionnaire, semi-structured interview and observation checklist. It contains six main sections. Section one deal with the background information's of respondents while section two and three deals with the extent to which teachers and students perform their roles while integrating PTV respectively. Finally; section four, five and six respectively deal with the roles of principals, the strengths of the newly revised PTVPI and factors affecting PTVPI.

As the researcher mentioned earlier, among various data collecting instruments; questionnaire, semi-structured interview and observation checklist were used to collect necessary or relevant information for this study. Thus, a total of 130 questionnaires containing 47 questions and 160 questionnaires containing 44 items were distributed to secondary school teachers and students respectively. But properly filled and returned questionnaires were 119 (91.5%) from teachers and 142 (88.8%) from students. The remaining 29 questionnaires were lost or not included in the analysis, due to the problems to be returned from respondents. Among 12 principals expected to be interviewed in the study area, the investigator interviewed 10 principals. Thus 83.3% of principals are properly participated and gave necessary information on the issue under investigation. Regarding supervisors, 5 of them were interviewed. This means, 83.3% of the supervisors were participated in the interview. One supervisor was not participated since he was absent during the time of data collection due to problem occurred on his families. Therefore, the total response rate is sufficient and safe to analyze and interpret the data.

The personal background (profile) of respondents as well as the overall results of the analysis of the issue under investigation is presented clearly hereunder.

4.1 Background Information of the Respondents

The respondents were asked to indicate their personal background information before providing their response to the items prepared for the issue under investigation. The details of their characteristics are given in table 4 below.

Table 4 - Characteristics of Respondents

No	Items		Respondents							
			Teachers		Students		Principals		Supervisors	
			No	%	No	%	No	%	No	%
1	Sex	Male	101	84.9	82	57.7	9	90	5	100
		Female	18	15.1	60	42.3	1	10	-	-
		Total	119	100	142	100	10	100	5	100
2	Age	15-24	16	13.4	136	95.8	-	-	-	-
		25-34	65	54.6	6	4.2	4	40	2	40
		35-44	36	30.2	-	-	6	60	3	60
		Above 44	2	1.7	-	-	-	-	-	-
		Total	119	100	142	100	10	100	5	100
3	Level of education	Grade 9	-	-	87	61.3	-	-	-	-
		Grade 10	-	-	55	38.7	-	-	-	-
		1 st degree	111	93.3	-	-	6	60	4	80
		MA/MSc	8	6.7	-	-	4	40	1	20
		Total	119	100	142	100	10	100	5	100
4	Work experience	1-5 years	19	16	-	-	-	-	-	-
		6-10 years	35	29.4	-	-	3	30	-	-
		11-15 years	34	28.6	-	-	4	40	2	40
		16-20 years	21	17.6	-	-	3	30	3	60
		>20 years	10	8.4	-	-	-	-	-	-
		Total	119	100	-	-	10	100	5	100

N.B. In table 4, Certificate and diploma were not included under level of education due to the absence of respondents in these levels.

4.1.1. Respondents Sex

As the information obtained from respondents regarding their sex in item 1 of table 4 shows, 101 (84.9%), 82 (57.7%), and 9 (90%) of teachers, students and principals respectively were males and

the remaining 18 (15.1%), 60 (42.3%), 1 (10%) were females. All (100%) of supervisors were males. So it is possible to infer that, majority of teachers, students and principals were males.

4.1.2. Respondents Age

As it can be seen in item 2 of table 5, 16 (13.4%) and 65 (54.6%) of teachers are within age level 15-24 and 25-34 while the remaining 36 (30.2%) and 2 (1.7%) of teachers are within the age level of 35-44 and above 44 respectively. Regarding the age of students, table 5 shows that, 136 (95.8%) and 6 (4.2%) of students are within the age level of 15-24 and 25-34 respectively. Moreover, table 5 shows, 4 (40%), and 6 (60%) of principals are within the age of 25-34 and 35-44 respectively. Furthermore, table 5 shows that, 2 (40%) and 3 (60%) of supervisors are within the age of 25-34 and 35-44 respectively.

From the above description, one can understand that, students are matured enough in terms of their age to understand and provide the correct (valuable) information to this study. Additionally, the description shows that; teachers, principals and supervisors are matured enough in terms of their age to identify and perform their duties and responsibilities. Moreover, their age shows that, there is heterogeneity (variety) in their age which in turn helps them to support each other by sharing their experiences.

4.1.3. Respondents Level of Education

Table 5 further indicates that, 8 (6.7%), 4 (40%) and 1 (20%) of teachers, principals and supervisors respectively have second degree whereas the remaining 111 (93.3%), 6 (60%) and 4 (80%) of teachers, principals and supervisors have first degree. Toward this, education and training policy suggests that, teachers and supervisors at the secondary schools level ought to have a minimum of first degree (MoE, 2010). Moreover, the existence of teachers with qualification beyond the minimum requirement of the government helps them to have deep (more) understanding about the subject matter they are teaching and to share it with their staff at their department level. Furthermore, the existence of principals and supervisors above first degree in the study area helps them in improving their professional competence and in serving their colleague teachers in a better way. This in turn might have its own contribution on improving quality of education in secondary schools. Therefore, it is possible to conclude that, majority of secondary school teachers; principals and supervisors have first degree and hence they are in the right position to perform their roles

regarding PTVP instruction because they fulfill the minimum criteria (standard) that Ethiopian educational policy requires for the position.

4.1.4. Respondents Work Experience

Item number 4 of Table 5 shows, 19 (16%) of teachers have 1 to 5 years of work experience whereas 35 (29.4%) of teachers and 3 (30%) of principals had 6 to 10 years work experience. The rest 65 (54.6%) of teacher, 7 (70%) of principals and 5 (100%) of supervisors had above 10 years services. Therefore, it is possible to infer that, majority of respondents experience is above ten years. This shows that, they have relatively better and deep understanding of the teaching profession and various programs carried out in schools. This in turn might enable them to identify the value of using PTV for instructional purpose and how to perform their roles while utilizing PTV.

4.2. Classroom Teachers Extent of performing their own Roles

Some scholars like Khan et al. (2012) stated that, although ITV has the potential to transform and improve the nature of education to a great extent the classroom teacher's role in technology rich classrooms is more demanding than ever. Similarly, Postholm, (2006) stated that, ITV is tool that mediate talk between pupils, pupil & teacher, but the teacher has to function as an advisor in the classroom by organizing and structuring the activity and 'scaffolding' the pupils in dialogues with them. So, to obtain the extent to which classroom teachers perform their own roles while utilizing PTV during classroom instruction, a list of questions were distributed to both teachers and students. Table-5 below presents the overall mean and standard deviation of the respondents' response regarding classroom teachers' role.

ASSESSING THE STATUS OF NEWLY REVISED PTVPI

Table 5- Respondents views for items related with the extent to which actual classroom teachers play their role while utilizing PTV for classroom instruction.

No	Items/indicators	Respondent	N	Mean	SD	t-value	P value
1	Classroom teachers teach by themselves without opening PTV	Teachers	119	2.28	0.89	0.23	0.46
		Students	142	2.21	0.91		
2	Classroom teachers introduce the objective of the days lesson before starting the lesson at the beginning	Teachers	119	1.73	1.02	1.19	0.24
		Students	142	1.61	0.67		
3	Classroom teachers motivate students to watch/follow Plasma TV lesson carefully	Teachers	119	2.43	0.92	0.93	0.35
		Students	142	2.33	0.78		
4	Teachers facilitate conditions for students to do in pair or group as ordered by the Plasma TV presenter	Teachers	119	2.19	0.83	0.90	0.37
		Students	142	2.11	0.74		
5	Classroom teachers follow up whether students complete their task/activity or not	Teachers	119	2.24	0.92	0.614	0.54
		Students	142	2.18	0.63		
6	Classroom teachers assist students to perform their task whenever they need their help	Teachers	119	2.51	0.69	-0.323	0.75
		Students	142	2.54	0.78		
7	Classroom teachers give feedback to students	Teachers	119	2.28	0.76	-0.039	0.97
		Students	142	2.28	1.03		
8	Classroom teachers leave the class as soon as the Plasma TV presenter stops (complete) the day's lesson.	Teachers	119	0.30	0.59	-0.749	0.45
		Students	142	0.36	0.62		
9	Classroom teachers revise /sum up the day's lessons by integrating it with the textbook	Teachers	119	3.09	1.03	-0.257	0.80
		Students	142	3.12	0.68		
10	Classroom teachers encourage students to read further by giving supplementary activities beyond the activities given by the Plasma TV teacher	Teachers	119	2.64	0.98	0.954	0.34
		Students	142	2.51	1.21		
	Overall scores	Teachers		2.196	0.86		
		Students		2.125	0.81		

Scales <0.49= Never, 0.5-1.49= rarely, 1.5 – 2.49= sometimes
2.5 – 3.49=usually >3.5= always

In item 1 of table 5 above, respondents were requested to rate the extents to which classroom teachers teach by themselves without opening PTV during classroom instruction. Accordingly, teachers (mean=2.28) and students (mean=2.21) indicates that, classroom teachers sometimes teach students without opening PTV. The standard deviation of teachers (0.89) also indicates that, their response is averagely 0.89 units far from their mean score (2.28). The standard deviation of students (0.91) also shows that, students' response is 0.91 units averagely far from their mean value (2.21). Thus students response is slightly diverse than teachers for this item. The result of T-test $t(259) = 0.23$, $p = 0.45$, indicates that, there is no significant difference in the response of teachers and students at 0.05 level. In addition to this, the result of observation checklist (mean=2.38) shows that, teachers are sometimes teaching without opening PTV. On the other hand interview held with secondary school principals indicated that, teacher's level of utilizing PTV during classroom instruction is moderate.. Therefore, it is possible to infer that, teachers of silte zone secondary schools are sometimes utilizing PTV for instructional purpose.

As item 2 in table 5 indicates, classroom teachers rated as they sometimes explain the objectives of the day's lesson to their students before starting the day's lesson (Mean=1.73). Their SD=1.02 also shows that, the response of teachers' is 1.02 units far from their mean score (1.73). Similarly, students response (mean=1.61) for the same item shows that, teachers sometimes introduce the objective of the lesson to their students before starting their day's lesson. Their SD=0.67 also shows students response is averagely 0.67 units far from their mean (1.61). Thus, the SD of both groups indicates that, teachers slightly a chose diverse response in a likert that has five scales than students. The computed value of independent sample T-test $t(259) = 1.19$, $p = 0.24$, indicates there is no statistically significant difference between the response of students and teachers regarding item 2. Besides, data obtained through observation checklist (mean=1.56) also shows that, teachers sometimes tell the objective of the lesson to be achieved at the end of the lesson to their students. That means, they sometimes directly inter in to the content of the day's lesson without telling the objective of the lesson at the beginning. The implication, thus, is that, teachers are not strictly performing their duties related with telling of the lessons objective to their students before entering in to the day's lesson. Towards this, instructional television (undated) argued that, classroom teachers should explain the purpose of viewing PTV lessons before the onset of the program and raise questions to be answered at the end of the program. Additionally, Meaza (as cited in Tesfaye,

2005) indicated that, classroom teacher should motivate his/her students by telling the specific objectives to be accomplished (achieved at the end) before broadcast of PTV starts.

With regard to item number 3 of table 5 above, the two groups of respondents rated in the same manner. That means, teachers response with (mean=2.43; SD=0.92) and students response with (mean=2.33; SD=0.78) indicates that, classroom teachers sometimes motivate their students to watch/follow the PTV lesson carefully. Test result $t(259)=0.93$, $p=0.35$, indicates that, there is no significant difference among respondents response at 0.05 level. Similarly, data obtained through observation checklist shows that, teachers' level of motivating students to watch/follow PTV lesson is moderate with mean value 2.39.

According to Saglik and Ozturk (2004), classroom teachers should always provide the environment of collaborative learning and interactive group discussion for the easy and permanent learning of students while integrating ICT in their lessons. But, the response of teachers (mean=2.19; SD=0.83) and students (mean=2.22; SD=0.74) for item 4 of table 5, indicates that, classroom teachers in the study area are sometimes facilitate conditions for students to do in pair or group as ordered by the PTV presenter. Similarly, the result of observation checklist (mean=2.33) reveals that, teachers sometimes (averagely) move in to different columns of students sitting arrangement to facilitate conditions for students and encourage pair/group activities. The computed value of T-test $t(259) = 0.90$, $p=0.37$, indicates that there is no significant difference among the two groups of respondents regarding item 4.

Even if there is slight difference in the mean score of respondents (teachers mean=2.24; SD=0.92) and students (mean=2.18; SD=0.63) for item number 5 of table 5 above, the response of both respondents remain in the same range. That means, teachers sometimes or moderately follow up whether their students complete their task or not. The analysis of test $t(259)=0.614$, $p=0.54$, also indicates that there is no significance difference in the response of the two groups of respondents at 0.05. Additionally, the result of observation checklist (mean=2.39) also shows that, the level of teachers following up of students whether they complete their task or not is moderate (average). Regarding this, Thevenin (2013) stated that, classroom teacher's activity during the broadcast time is creating conducive atmosphere (situations) so that students participate based on the advice given from the TV teacher. By supporting this, Brady (1998) also stated that, classroom teachers should check whether the learners are following the lesson silently and attentively or not.

As the result of teachers response (mean=2.51; SD=0.69) and students response (mean=2.54; SD=0.78) in item 6 of table 5 above indicates, classroom teachers usually assist their students when students need their teachers support. The computed t test $t(259) = -0.323$, $p=0.75$ also indicates that there is no significant difference in the response of both teachers and students at 0.05 level. Additionally, information obtained through observation checklist (mean=2.61) also supports the above idea. That means, teachers were answering questions when raised by students and giving some comments around all the rows in classrooms while students raise and show them their hands. Towards this, Thevenin (2013) stated that, classroom teachers are expected to assist their students while they are doing different activities and exercises which are requested by PTV teacher. By supporting this, Brady (1998) also argued that, classroom teachers should answer/clarify unclear ideas and concepts.

Scholars like Saglik and Ozturk (2004) stated that, classroom teachers should give the proper feedback to their students and help them to interrelate the subjects. However, as the response of teachers (mean=2.28; SD=0.76) and students (mean=2.28; SD=1.03) indicates that, teachers in Silte zone are sometimes giving feedback to their students like providing corrections for class works and home works when students need teachers support. The calculated T test result $t(259) = -0.039$, $p=0.97$, also illustrated that, there is no significant difference in the response of the two groups of respondents at 0.05. In similar way, the data obtained from observation checklist has mean= 2.33, which also indicates that, teachers sometimes perform this activity in the study area. Hence, one can recognize from the discussion that, the level of classroom teachers performing their task related with giving feedback to their students is moderate.

Concerning item 8 of table 5, both the teachers and the students responded, classroom teachers never leave the class as soon as the PTV teacher completes the day's lesson with mean 0.30 and 0.35 respectively. T value $t(259) = -0.75$, $p=0.45$, indicates that, there is no significant difference in the response of respondents at 0.05 level. Additionally, for the question prepared to measure the extent to which teachers revise the day's lesson after completion of the PTV presentation, the response of teachers (mean=3.09) and students (mean=3.12) shows that, teachers usually revise the days lesson at the end of the completion of PTV presentation. By supporting this, data obtained through observation checklist (mean=3.56) shows that, classroom teachers revise the whole lesson of the day after the completion of the broadcast. This means they revise the lesson after completion of PTV broadcast. The result of observation checklist also showed that, teachers were not leaving

classes as soon as PTV presenter completes the day's lesson. Furthermore, principals during interview said, teachers never leave their class soon the PTVP is over. In line with this, Theveninn (2013) wrote that, after viewing the program (PTV broadcast) classroom teachers should use probing questions based on the video lesson to encourage classroom discussion and follow up whether students complete an activity or not. By supporting this, Willis (1995) also stated that, classroom teachers should revise and sum up the day's lesson. Beside he/she should check whether the daily specific objectives of TV lesson have been achieved or not.

The response of teachers (mean=2.64; SD=0.98) and students (mean=2.51; SD=1.21) for item number 10 of the table 5 shows that, teachers usually encourage students to read further by giving supplementary activities beyond the activities given by the PTV teacher. Regarding this, the result of observation checklist (mean=2.89) also showed that, teachers usually encourage their students to read further by giving supplementary activities after the PTV lesson was completed even if it was performed (reflected) more on natural science teachers. T test $t(259)=0.95$, $p=0.34$, indicates that there is no significant difference in their response at 0.05. Therefore, it is safe to say that, teachers of Silte zone secondary schools encourage students to read further by giving extra activities in addition to the activities given by the PTV presenters.

In sum, the overall mean score of teachers (2.169) and students (2.125) for the above items indicates that, classroom teachers are sometimes performing their activities as indicated in plasma guide. By supporting this, the overall mean score of observation checklist (2.28) for the same items shows that, classroom teachers are sometimes performing their roles. Moreover, the overall standard deviation of both teachers and students is 0.86 and 0.81 respectively. This indicates that, the response of teachers is averagely 0.86 units far from their overall mean (2.17) and students' response is 0.81 units far from their overall mean scores (2.13). This in turn indicates that, teachers' response is slightly more diverse than that of students. Therefore it is possible to analyze that, teachers in Silte zone secondary schools are sometimes performing their roles as stated in plasma guide. Beyond this, the researcher examined whether gender, age and experience of classroom teachers have influence on extent of integrating PTV or not. Each of them is discussed one after the other as follows;

Regarding the relationship between gender and extent of integrating ITV, scholars like Andoh (2012) and Totter (2006) pinpointed out that, male teachers used more ITV in their teaching and

learning processes than their female counterparts because female teachers' have low levels of ICT use due to their limited technology access, skill, interest and women were more strongly influenced by subjective norm. To examine the presence or absence of such difference in integrating PTV (performing their roles while utilizing PTV) during classroom instruction among male and female teachers in the study area, further statistical investigation is conducted. To this end, an independent samples t-test is used. As the test result, $t(117) = 1.134$, $p = 0.26 > 0.05$, indicates that, there is no statistically significant difference between male and female teachers mean on the level of integrating PTV (performing their roles while utilizing PTV) during classroom instruction. But the mean score of female teachers on the level of integrating PTV (performing their role) during classroom instruction (mean=2.03, SD=0.77) is slightly less than male teachers (mean=2.26, SD=0.80). Table-6 below shows the overall results of the analysis.

Table 6. Comparisons of the levels of integrating PTV for classroom instruction between male and female teachers.

Sex	N	Mean	SD	t-value	p-value
Male	101	2.26	0.80	1.134	0.26
Female	18	2.03	0.77		

Overall, Table-6 above indicates, male and female teachers in Silte Zone have similar level of performing their roles (integrating PTV) while utilizing PTV during classroom instruction. Thus, sex might not influence teachers' level of performing their roles while using PTV for classroom instruction in the study area.

The above discussion indicates that there is difference in the findings of this study and scholars such as Andoh and Totter. The reason for existence of differences in the finding of this study and the above mentioned scholars is due to the fact that Ethiopian education system provides equal educational opportunity so that both male and female teachers will have equal access for technology, skill and interest when they were in higher institutions than country were Andoh and Totter conducted their research.

To check the relationships between teachers' age and their level of integrating PTV for classroom instruction among teachers in secondary schools of Silte Zone, one-way analysis of variance is conducted. The result of the analysis, $F(3,115) = 4.65$, $p = 0.04$ which is < 0.05 , indicates that, there is a statistically significant difference between teachers of various age groups. Thus, the post Hoc

test indicates, significant difference lies in age group between 15-24 and 35-44. The graph below indicates the relationship between teachers' level of integrating PTV for instructional purpose and their age.

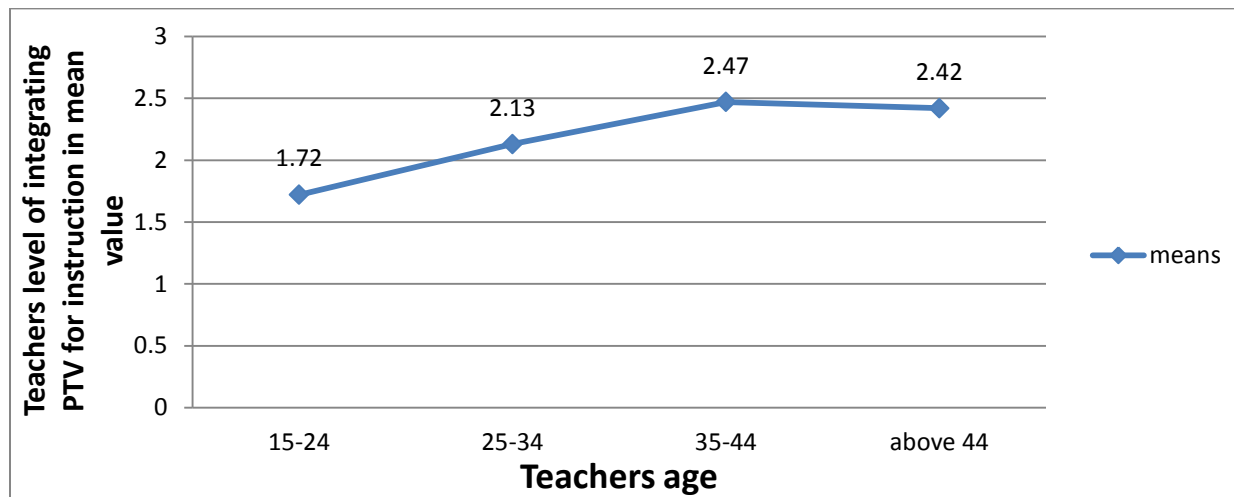


Figure 1- The relationship between teachers' level of integrating PTV and their age

Figure 4 above indicates, as the age of teachers change from 15-24 to 25-34 their level of integrating PTV for classroom instruction also increases from the mean values of 1.72 to 2.13. This indicates that, younger teachers tend to utilize PTVP less than those who have greater age. Additionally, as the age of teachers increase from 35-44 to above 44, their level of integrating PTV (performing their roles while utilizing PTVP) for classroom instruction also slightly increase from mean value of 2.13 to 2.47. But, the status of integrating PTV (performing their role) for teachers slightly decrease as their age exceeds 44. By supporting this one of the school principals during interview said;

‘I sometimes hear complain from students in both younger and older teachers. But the situation is more common in younger teachers (12/07/06 E.C at 4:10 local time)’.

Another school principal also added that;

Younger teachers have good moral of teaching students with oral lecture and this situation takes them to prefer teaching without PTV. I mean, some younger teachers do not use PTV until they are accused by students (Monday 15, 2006 E.C at 3:15 local time).

The other school principal also informed that;

“Younger teachers assume as the lesson is not clear to students when they use PTV for classroom instruction. As a result they prefer to teach by themselves (19/06/2006 E.C at 3:40)”

Beyond these, one of the supervisors also informed that;

“Students mostly accuse younger teachers due to their less interest to use PTV than the older once because they are enable to effectively use, and manage the amount of time given by the PTV presenter (Wednesday, 17/07/2006 at 3:35)”

One of the supervisors also added that;

“Fresh teachers afraid to use PTV than older teachers even if situations are good for them. It is to mean that, nowadays there is good opportunity for fresh graduate to take the course ICT in universities (9/07/06 at 5; 10 local time)”

From the discussion above, one can easily recognize that, teachers’ level of integrating PTV (performing their roles while integrating PTV) for classroom instruction increases as their age increase and it slightly decreases after the age of 45. This indicates that, age has influence on teachers’ level of integrating PTV for classroom instruction in the study area. By supporting this finding, Andoh (2012) pointed out that, older teachers easily integrate ITV in to teaching in classrooms more than the younger teachers because they have rich experience in teaching, classroom management and also competent in the use of ICT. But, in opposite to this, Dereje Matiwas (2013) school plasma transmission coordinator and English teacher in Hawassa Tabor secondary school of SNNPRS during workshop prepared by education information communication technology center for experience sharing regarding PTV said, “especially, old aged teachers have plasma phobia”. Thus, I comment that, the idea of Andoh which state that, male teachers used more ITV in their teaching and learning processes than their female counterparts is wrong if female and male teachers are provided equal opportunities for technology access and skill.

Regarding the relationship between experience of teachers and extent of integrating PTV for classroom instruction the result of one way analysis of variance $F(2,116) = 4.47$, at $p=0.013$, indicates that, there is statistically significant difference between teachers that have different years of experiences. Thus, the Post Hoc results of one way ANNOVA indicated that, the significant difference lies between teachers having experience of 1-5 years and above 5 years. The graph below

indicates the relationship between teachers’ level of integrating PTV (performing their task while utilizing PTV) for instructional purpose and their educational experience.

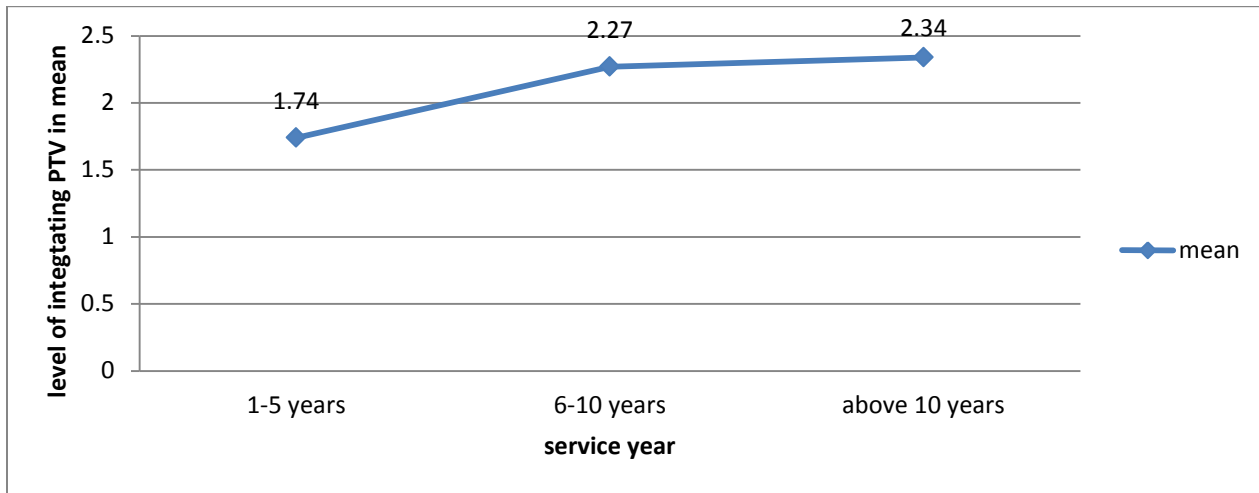


Figure 2. The relationship between teachers’ work experience and level of integrating PTV for instruction.

Figure 5 shows the mean score of teachers changed from 1.74 to 2.27 as their experience changes from 1-5 years to 6-10 years. In addition to this, the mean score of teachers slightly changed from 2.27 to 2.34 as their experience changes from 6-10 years to above 10 years. This indicates that, as the experience of teachers increase their level of integrating PTV also increase. Concerning the relationship between teachers level of integrating PTV and their educational experience, the data obtained from directors and supervisors seems that; [where D represent directors and S represent supervisors];

Newly employed teachers need to teach by themselves because they afraid to use PTV [D2]. Yes, fresh teachers prefer to use the conventional method of teaching rather than using PTV for instruction because they sometimes do not understand the accent (message) of PTV teacher and become confused [D3]. Less experienced teachers are commonly accused by their students because they always tend to teach without PTV [D4]. Teachers who stay long years by teaching with PTV use PTV more than the new comers because they know how to manage their time and easily communicate with their students within the allotted time [D5]. Less experienced teachers have also less experience of operating PTV and less experience of managing the time for activities given by PTV presenter. As a result they commonly

fail to communicate with their students when they use PTV and hence they prefer to teach by themselves rather than using PTV [S3]. More experienced teachers know how to handle students and manage time given by PTV teacher. As a result students accuse fresh teachers by comparing them with experienced teachers (S1 and S2).

Regarding the relationship between educational experience and level of integrating PTV for instructional purpose, Afshari (2009) pointed out that, teachers with fewer years of experience were more likely to use ITV in their classes than teachers with more years of experience and he concluded that this may be due to the fact that new teachers have been exposed to ICT during their training and therefore, have more experience of using this tool. Similarly, Andoh (2012) found out that, experienced teachers are less ready to integrate ITV into their teaching than less experienced ones. So, from the discussion above, it is safe to conclude that, educational experience has influences on teachers' level of integrating PTV for classroom instruction in the study area. As to the researchers feeling teachers' skill of operating PTV increases as their experience increases. So, the researcher is in opposite direction to the findings of Andoh and Afshari which says that, teachers with fewer years of experience were more likely to use ITV in their classes than teachers with more years of experience and experienced teachers are less ready to integrate ITV into their teaching than less experienced ones.

4.3. Students Extent of performing their Roles (activities)

As different scholars identified in their studies, ITVP cannot be effective if students do not share their own role during instruction. To this effect, different questions were distributed to teachers and students to find out the extent to which students in study area perform their roles while utilizing PTV for instructional purpose. Table 7 below summarizes the overall response of respondents.

Table 7 - Respondents views for items prepared to measure the extent to which students perform their roles during instruction by using PTV.

No	Items/indicators	Respondent	No	Mean	SD	t value	P value
1	Students bring their text books to classroom	Teachers	119	1.37	1.16	-0.23	0.82
		Students	142	1.40	1.05		
2	Students make effort to do tasks as instructed by the plasma teacher	Teachers	119	2.72	0.71	-0.89	0.38
		Students	142	2.81	0.85		
3	Students pay attention to the presentations (explanation) given by the PTV.	Teachers	119	3.02	0.69	-0.67	0.5
		Students	142	3.08	0.90		
4	Students follow the lesson energetically	Teachers	119	2.68	0.83	-1.467	0.14
		Students	142	2.85	0.96		
5	Learners make effort to interact with their classmates while performing activities	Teachers	119	2.2	0.79	-1.68	0.10
		Students	142	2.37	0.86		
6	Learners consult classroom teachers to check the correctness' of their activity	Teachers	119	2.16	0.98	1.00	0.32
		Students	142	2.04	1.00		
7	Learners do not feel sleep and not bored	Teachers	119	3.12	0.69	-1.42	0.16
		Students	142	3.23	0.71		
8	Learners ask classroom teachers for further clarification if the plasma teacher's presentation is not clear	Teachers	119	2.74	0.83	-1.12	0.27
		Students	142	2.87	0.98		
9	Learners participate in answering questions when raised by plasma teacher	Teachers	119	2.77	1.01	0.79	0.43
		Students	142	2.68	0.96		
Overall result		Teachers		2.57	0.85		
		Students		2.58	0.92		

Scales; <0.49 = Never, 0.5-1.49 = rarely, 1.5 – 2.49 = sometimes,

2.5 – 3.49 = usually

>3.5 = always

As it can be seen from table 7 above, the mean score of respondents differ from item to item. That means, the mean score of respondents for item number 1, 5, and 6 is below the average mean score

of all items while the mean score of the remaining items is above the average mean score. This indicates that, students' level of performing one role is different from the other. For example, the response of teachers (mean= 1.37) and students (mean=1.4) for item number 1 of table 7 shows that, students are rarely bringing their text books to classrooms. The standard deviation of teachers (1.16) and students (1.05) also indicates that, the response of teachers and students is averagely 1.16 units and 1.05 units far from their mean scores respectively. The t test result ($t = -0.23$, $p=0.82$), indicates that, there is no significant difference in the response of both groups. On the other hand, the data obtained through observation checklist regarding students' text book has mean value of 1.44. This indicates that, the amount of text books brought by students during observation was not satisfactory. In opposite to this, scholars like, Meaza (as cited in Tesfaye, 2005) stated that, students must have text book, exercise book and pens during classroom instruction because it facilitate (support) the instructional process.

The mean score of teachers and students is 2.2 & 2.39 for item number 5 of table 7. This shows that, students sometimes interact with their classmates while performing different activities given by PTV teachers. The computed test $t(259) = -1.88$, $p=0.1$, indicates that, there is no significant difference in the response of both groups of respondents. Regarding this, data obtained through observation has mean value of 2.22. This in turn indicates that, the extent of students to interact with one another is still moderate as obtained earlier through questionnaire. Towards this, Willis (1995) stated that, students should work on given exercise, answer questions and compare their answers with others. He also added, they should also make interaction with their classroom teacher in order to get proper feedback on their self-directed subjects and consult to teachers for correctness and evaluation.

The response of teachers (mean=2. 27; SD=0.98) and students (mean= 2.04; SD=1) for item number 6 of the table 7 above indicates that, students sometimes consult their classroom teachers to check the correctness' of their work. The computed test $t(259) = 1.83$, $p=0.32$, indicates that, there is no significant difference in the response of both groups of respondents. Regarding this, the data obtained from observation checklist has mean value 2.33. This indicates that, the extent of students consulting their classroom teachers is moderate.

Moreover, table 7 above shows that, the mean value of both respondents is greater than 2.5 for item numbers 2, 3, 4, 7, 8, and 9. This indicates that, students are usually performing activities

represented (indicated) by each items. By supporting this, the data obtained through observation checklist for the above items has mean value between 2.49 and 3.5. This indicates that, students are usually performing their roles indicated by the above items such as making effort to do tasks as instructed by the plasma teacher, paying attention to the presentations (explanation) given by the PTV, showing motivation & following the lesson energetically. The computed t test result for the above items is $t(259) = -0.89, -0.67, -1.47, -1.42, -1.12, \text{ and } 0.79$ respectively at $p > 0.05$ for all items. This indicates that, there is no significant difference in the response of the two groups of respondents. Therefore, it is possible to generalize that, students' level of performing their roles regarding item number 2, 3, 4, 7, 8, and 9 is appreciable.

In sum, for items prepared to measure the extent to which students perform their role in table 7 above, the overall mean result of teachers and students is 2.57 and 2.58 respectively. This indicates that, students are usually performing their roles in the study area. By supporting this, data obtained through observation checklist has overall mean value of 2.64. This also shows that, students are usually performing their roles as indicated in plasma guide. Therefore, it is safe to generalize that students in the study area are usually performing their activities (roles). The overall standard deviation of teachers and students is 0.85 and 0.92 respectively. This indicates that, the response of teachers is averagely 0.85 units far from their overall means (2.57) and students' response is 0.92 units far from their overall mean scores (2.58). This in turn indicates that, for items prepared to determine the extent to which students perform their roles, students selected slightly diverse responses than teachers among the five likert scales responses.

4.4. The Roles of Principals

Scholars wrote that, principals are expected to connect the school with the community, maintain safe and secure school environment, and utilize resources including technology to support student and staff learning. To this effect different questions were prepared and distribute to teachers and students to measure the extent of principals supporting PTVPI in the study area. Table 8 below shows the summary of respondent views.

Table - 8. Respondents view regarding the extent to which principals support PTVP instruction.

<u>No</u>	<u>Items/indicators</u>	<u>Respondent</u>	<u>No</u>	<u>Mean</u>	<u>SD</u>	<u>T value</u>	<u>P value</u>
1	Principals aware students especially those who enter grade 9 at the beginning of the year.	Teacher	119	1.82	0.69	0.051	0.96
		Student	142	1.81	0.92		
2	Principals prepare schedule (time table) on time at the beginning of the year.	Teacher	119	2.90	0.76	0.31	0.76
		Student	142	2.87	0.94		
3	Principals match the schools schedule (time table) with Plasma TV broadcast time.	Teacher	119	3.56	0.5	1.03	0.3
		Student	142	3.47	0.85		
4	Principals follow up teachers progress of implementing Plasma TVP (supervision)	Teacher	119	2.26	0.89	-1.53	0.13
		Student	142	2.43	0.89		
5	Principals take measure on teachers that do not use Plasma TVP as intended	Teacher	119	0.31	0.61	0.496	0.62
		Student	142	0.28	0.57		
6	Principals make effort to prepare workshops by communicating with the Zonal education bureau	Teacher	119	1.01	0.74		
7	Principals provide the lesson on time in the form of CDs to you as necessary	Teacher	119	3.52	0.72		
8	Principals make effort to fulfill materials like DVDs, remote controls, dividers, generators and etc by communicating with the zonal and/or woreda educational officials	Teacher	119	1.58	0.5		
	Overall score	Teachers		2.12	0.68		
		Students		2.17	0.83		

Scales; <0.49= Never, 0.5-1.49 = Rarely, 1.5 – 2.49 = Sometimes,
 2.5 – 3.49= Usually, ≥ 3.5 = Always

In item 1 of table 8 indicates, the score of teachers response (mean= 1.82) and students response (mean=1.81) shows that, secondary school director's sometimes aware students about PTVP especially at the beginning of the year. The standard deviation of teachers and students response is 0.69 and 0.92 respectively. This also indicates that, teachers' response is 0.69 units far from their

mean (1.82) and students' response is 0.92 units far from their mean (1.81). The computed t value $t(259)=0.051$, $p=0.96$, indicates that, there is no significant difference in the response of the two groups at 0.05 level. Regarding this, interview held with one of secondary school directors showed that;

'At the beginning of the year we are so busy due to student's registration and period allocation. So it is difficult to prepare formal meeting. But we always aware our students at time of flag ceremony (Megabit 08, 2006 E.C at 3.20 o'clock)''

The director of another school also informed that;

Reporting the number of students to woreda education bureau and other issues like school time table preparation make us so busy. In addition to this, the result of grade 8 national exam comes late. As a result, all students do not come at the same time at the beginning of the year. So, it is difficult to prepare formal meeting for few students who come earlier than others. So we give awareness to our students during flag ceremony (11/07/2006 E.C at 3.00 local time)

One of the supervisors also said;

School directors sometimes provide awareness to their students. But MoE always give awareness to students through PTV at the beginning of the year for two to three days. Therefore, I understand that, it is not that much necessary to prepare additional meeting and to take extra days of the lesson from students (14/0706 E.C at 8.10 local time).

Regarding this, scholars like (Willis, 1995) argued that, school principals are expected to give awareness for students and facilitate duplication and distribution of text book and schedule preparation. So, from this discussion one can understand that, directors are sometimes providing awareness to students. Therefore, it is possible to generalize that, the awareness given to students concerning PTVP especially for grade 9 students at the beginning of the year is moderate.

With regard to item 2 of table 8, the responses of teachers and students have mean value 2.9 and 2.87 respectively. This indicates that, school directors usually prepare schedule or time table on time in order to facilitate teaching learning process. The calculated t test $t(259)=0.31$, $p=0.76$ also indicates, there is no significant difference in the response of both groups of respondents at 0.05

level. Similarly, information obtained through interview from one of secondary school principals informed that;

‘Yes, we prepare it on time as much as possible because it is not possible to teach without time table (08, 2006 E.C at 2.30 local time)’.

Another school director also informed that;

Yes, we try to prepare it on time. but sometimes teachers teach without constant time table especially at the beginning of the year because MoE sometimes change the PTV time table and it take few days until we prepare the program in line with it (9/07/06 E.C at 2:40).

The other school director also informed that;

Yes, we prepare it on time. But some students do not come on time to school at the beginning. As a result of this, teachers combine two or more classes together and they may not use the school time table that we prepared (13/07/06 at 3:20).

One of the supervisors forwarded;

‘Yes, directors always prepare time table on time because it is impossible to work without it (9/07/06 at 4:08)’.

As depicted in item 3 of table 8 above, teachers (mean= 3.56; SD=0.5) and students (mean=3.47; SD=0.85) indicates, secondary school directors usually match schedule or weekly time table with the PTV broadcast time. The t-test value $t(259)=1.92$, $p=0.056$, indicates that there is no significant difference in the response of the two groups. By supporting this, the result of observation checklist indicated that, there is 94.4% match between schools time table allocation and PTV broadcast time. Moreover, secondary school principals and supervisors during interview informed as directors always make effort to match the schools time table with PTV broadcast time. They further argued as there are rare cases in which PTV broadcast time do not match the schools time table when there is shortage of teachers and large number of period (>15 credit hour) is given to a specific teacher. Hence, it is possible to say that, secondary school directors are usually matching their schools time table with PTV broadcast time.

In item 4 of table 8 above, respondents were asked to measure the extent in which principals follow up the progress of PTVP instruction. Accordingly, the mean score of teachers and students response

were 2.23 and 2.43 respectively. This indicates that, directors sometimes follow up the progress of PTVPI instruction. The calculated test result $t(259) = -1.53$, $p = 0.13$ also indicates that there is no significant difference among the two groups of respondents. In similar way, the information obtained through interview from most of directors and supervisors seems;

I think it is mandatory for teachers to utilize PTVPI for instructional purpose because the government of Ethiopia already believed that, it is a good technology to enhance quality of education as well as to promote equity among citizens. Our teachers know this advantage and we working together with them to achieve its goal [D1]. Yes, we sometimes follow up their progress and encourage them to use it [D2]. Due to many factors affecting PTVPI the government effort of forcing teachers in order to use PTV has reduced. As a result my rate of following up its implementation is reduced when I compare it with the previous PTVPI [D3]. Directors and our extent of following up teachers progress of PTVPI has been reduced because of the lack of many things required for its implementation. So teachers are using PTV based on their interest and their students' interest [S1, S2, and S3].

From this discussion, it is possible to infer that, directors' effort of following up teachers' progress of utilizing PTVPI for instructional purpose is moderate. Moreover, interview held with principals and directors informed that the pressure of government and concerning stakeholders to promote the utilization of PTVPI in the zone has been reduced.

Item 5 of table 8 inquire respondents to rate about the extent to which their school directors take measure on teachers that do not utilize PTV as intended. Accordingly, teachers response (mean=0.31; SD=0.61) and students response (mean=0.28; SD=0.57) indicates that, directors never take measure on teachers that do not utilize PTV. The computed t test $t(259) = 0.50$, $p = 0.62$ which is > 0.05 , also indicates as there is significant difference in the response of the two groups of respondents. Regarding this, interview held with secondary school directors revealed that (D is director; S is supervisors);

You know it is difficult to take measure on teachers that do not utilize PTV. But we can give advice to him/her if students consecutively inform us [D1]. To identify teachers that do not utilize PTV we sometimes move around classrooms and supervise them. If the situation is repeated, we give warning to him/her [D2].

Students by themselves come to our office and inform those teachers that do not use PTV. If that is the case, we inform the issue to their respective departments so that they follow and take measures on those teachers that do not use PTV [D3]. It is really difficult to take measure on teachers but sometimes when there is serious problem; directors take measure on teachers by communicating with us [S1, S2, and S3].

From this discussion, it is possible to infer that, principal's effort to take measures on teachers that do not utilize PTV as intended is moderate.

Concerning the effort of directors to prepare workshops by communicating with woreda or zonal education bureau, teachers response (mean=1.01; SD= 0.74) shows that, directors sometimes perform this task. The result of interview held with directors and supervisors also supports this idea by saying;

It is difficult to prepare workshop at school level because it needs time and financial capacity. But there are rare cases in which the zone education bureau asks us to send some teachers for workshop. During such case we select the appropriate individuals based on criteria and send them. To reduce the problems that occur as a result of less experience regarding PTV utilization on teachers we made a link between novice and experienced teachers through mentoring and CPD so that they can help each other [all directors]. Directors always inform us so that we prepare training program for teachers. In the same way we inform it to the zone education bureau because it is beyond our level [all supervisors].

So, the above discussion implied that, workshops are rarely given to teachers concerning PTV instruction and directors' effort to prepare it by communicating with concerning bodies is moderate.

For item 7 that inquire teachers to measure the extent to which their directors provide the lesson in the form of CDs to them, they rated as their school directors always perform this activity by providing it on time with (mean 3.52; SD=0.72). This is to mean that, lessons prepared in the form of CDs to support teachers to see the lesson before entering in to classrooms and to prepare themselves accordingly can be sent to schools from MoE and directors provide it to teachers. By supporting this, the data obtained through observation showed that, CD lessons are 100% available

in all schools of the study area. Therefore, it is safe to suggest that school directors performed well in regard to fulfilling CD lessons.

Regarding the effort of directors to fulfill materials like generators, DVDs, remote controls, and dividers, teachers rated as their school directors sometimes make effort to fulfill these materials with (mean= 1.58; SD=0.5) in item 8 of table 8 above. In opposite, interview held with directors and supervisors seems;

We always make effort to fulfill all materials that facilitate the utilization of the program. For example some materials like dividers, remote controls and other cheaper materials can be easily fulfilled by buying it from schools budget. But the issue of generators, DVDs and new PTVs that take CDs is a little bit difficult to fulfill by using the schools budget because it needs huge amount of money. So, in such situations we inform it to the concerning body and they try to fulfill it. But now, the most burning issue at this moment that our school needs to be solved by the government is the issue of new PTVs.

Therefore, this discussion implies us that, the effort of directors to fulfill materials that facilitate utilization of PTVPI is appreciable. Towards this, Saglik and Ozturk (2004), stated that school principals basically need to facilitate the provision of supportive materials like satellite TV program manual, students' textbooks, teacher's guide, reference books, and audio and video cassettes.

In sum, as the overall mean score of teachers response (mean=2.12) and students response (mean=2.17) for items prepared to measure the extent to which directors support PTVPI in the study area, indicates that, directors are sometimes (moderately) supporting PTVPI. Moreover, the standard deviation of teachers (0.68) and students (0.83) indicates that, the response of teachers is 0.68 units far from their overall mean score (2.12) and the response of students is 0.83 units far from their overall mean (2.17). This indicates that, the response of teachers is closer to the mean and that of students is a little bit diverse. Therefore, one can recognize that, directors' effort to perform their roles regarding PTVPI instruction is moderate.

4.5. The Strengths of the Newly Revised PTVPI

Scholars like Spodork (2001) stated that, plasma teachers in televised instructions are expected to function as motivators, mediators, and designers of tasks. By supporting this, Willis (1995) wrote plasma teachers should perform different activities at different stages of PTV broadcast to make the

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lesson more effective. Thus, in this research, to find out the strengths of the newly revised PTVPI in general and the extent to which it strength support both classroom teachers and students to perform their roles in particular, the following items were distributed to both teachers and students.

Table 9 – Respondents view regarding the extent to which the strengths of the newly revised PTVPI support them to perform their roles

No	To what extent does the following strengths helped you to enjoy it and perform your roles as intended	Respondent	No	Mean	SD	T Value	P value
1	Its accessibility (existence of the lesson in the form of CDs so that teachers can see it at their homes.	Teacher	119	4.13	0.82	1.11	0.27
		Student	142	4.01	1.00		
2	Its selectivity in terms of content to be taught (being designed for practical contents)	Teacher	119	4.16	1.02	-1.41	0.16
		Student	142	4.31	0.7		
3	Its ability of providing more freedom for classroom teachers and students to interact together(20 minutes for interaction)	Teacher	119	4.17	0.83	-1.75	0.082
		Student	142	4.34	0.74		
4	Being designed in a way that highly matches (fits) the content of text book	Teacher	119	4.34	0.74	-1.43	0.16
		Student	142	4.46	0.64		
5	Its ability of giving more time for students to complete activities/exercises.	Teacher	119	3.17	0.86	1.79	0.075
		Student	142	2.94	1.12		
6	Being designed in a way that presents the lesson at normal speed (The speed of PTV presenter is not very fast)	Teacher	119	3.22	0.90	0.92	0.36
		Student	142	3.1	1.16		
7	Its flexibility so that teachers demonstrate it when even needed even after the direct transmission is over (during the tutorial class)	Teacher	119	4.24	0.86	1.34	0.18
		Student	142	4.10	0.88		
8	Its ability of using understandable language (accent).	Teachers	119	3.08	0.82	0.97	0.33
		Students	142	2.97	1.02		
	Overall score	Teacher		3.814	0.86		
		Student		3.779	0.91		

Scales; <1.49 – very slightly, 1.5 –2.49- slightly, 2.5 – 3.49- moderately
 3.5 – 4.49- highly >4.5 – very highly

As indicated in item 1 of table 9, the mean scores of both teachers and students are 4.13 and 4.01 respectively. This indicates that, the strength of the newly revised PTV in terms of its accessibility is highly supporting both teachers and students to perform their roles. That means the existence of the lesson in the form of CDs help teachers to see the lesson before entering in to classrooms and to prepare themselves accordingly. It is to mean that, it increase teachers confidence of discussing the lesson to students. But in the previous PTV some questions that challenge both teachers and students appear on PTV screen and this reduces teachers' confidence as well as their authority in front of their students. In addition to this, it reduce teachers burden of reading many areas of the lesson that do not directly coincide with the days lesson and this in turn helps them to give the necessary support to their students, like forming small groups before starting the lesson. The standard deviation of teachers and students was 0.82 and 1.00 respectively. This indicates that, the response of teachers is averagely 0.82 units far from their mean (4.13) and the response of students is averagely 1.0 unit far from their mean (4.01). The calculated test result $t(259)=1.11, p=0.27$, indicates that, there is no significant difference in the response of respondents. Regarding this, Joshy and Verspoor (2012) stated that, one of the weaknesses of the previous PTV system was teachers cannot see the lesson prior to broadcast; they are unable to integrate them in to their own programs. This in turn undermines their authority.

As the response of teachers (mean=4.16; SD=1.02) and students (mean=4.31; SD=0.7) for item 2 of table 9 indicates, the strength of the newly revised PTV in terms of selectivity of content to be thought is highly supporting both students and teachers to perform their roles. This means, for topics that require experiment, students learn through PTV and this in turn helps them to gain better experience. For example, very small, dangerous and very large things that are impossible to be brought in to classrooms setting by their classroom teachers can be easily seen clearly by using PTV and topics that are theoretical in nature can be covered in a better way by classroom teacher because he/she gives better explanation than the PTV teacher even by repeating areas that are not clear to students. But in the previous PTV system the whole content of the lesson was designed to be covered by PTV teacher and this created less opportunity for students to understand theoretical parts of the lesson because PTV teacher was too fast on these parts. The calculated test result

$t(259)=-1.41$, $p=0.16$, indicates that, there is no significant difference in the response of both group of respondents. The standard deviation of teachers and students was 1.02 and 0.7 respectively. This indicates that, the response of teachers is averagely 1.02 units far from their mean (4.16) and the response of students is averagely 0.7 units far from their mean (4.31).

Teachers (mean=4.17; SD=0.83) and students (mean=4.34; SD=0.74) for item 3 of table 9 indicates, the strength of newly revised PTVP in terms of its ability to provide more freedom for teachers and students to interact one another is highly supporting both teachers and students to perform their roles. That means, it help teachers to provide the necessary support, sufficient feedback and to revise the lesson appropriately. It also helps teachers to follow up the progress of students. In addition to this, it helps students to ask their classroom teacher about points which are not clear during PTV presentation and to take notes from PTV presentation. But in the previous PTVP system 30 to 35 minutes are going to be taken by PTV teacher and the remaining five to ten minutes are given for classroom teacher which reduces the students' level of interaction with their classroom teachers. This by itself created less opportunity for classroom teachers and students to interact and gain the above benefits. Towards this, local researchers like Kassahun et al. (2011), Eyasu (2011) and Negash (2008) which conducted their study on the previous PTVP found out that, it provide insufficient time for the school teacher involvement as well as for students to take their own notes and to do class exercises. Test result $t(259)=-1.75$, $p=0.082$ which is >0.05 indicates, there is no significant difference in the response of teachers and students.

As indicated in item 4 of table 9, the response of teachers (mean=4.34, SD=0.74) and students (mean=4.46; SD=0.64) shows that, the strength of the newly revised PTVP in terms of matching the content of the lesson with students' text book is highly helping both students and teachers to perform their roles. That means it help students to prepare themselves accordingly before entering in to classroom and this in turn helps them to show motivation, follow the lesson energetically and participate actively in the lesson. In addition to this, it helps teachers to introduce the objective of the day's lesson because each lesson has its own objective at the beginning of topics on text book. It also help teachers to encourage students to read further by giving supplementary activities found in the text book. But in the previous PTVP there was slight difference in the content of students' text book and PTV lessons guide. This created confusion on students to read which of them even for grade ten national (Matric) exams. Test result $t(259)=-1.43$, $p=0.16$ which is >0.05 also indicates, there is no significant difference in the response of teachers and students.

Furthermore, teachers and students mean score for item 7 of table 9 is 4.24 and 4.1 respectively. This indicates that, the strength of the new PTVP in terms of its flexibility is highly supporting both teachers and students to perform their roles. That means, it help teachers to repeat the lesson even after the direct PTV broadcast is over if the lesson is not clear to their students. That means since the lesson is on the hand of classroom teachers in the form of CDs, teachers show the lesson repeatedly to their students until it becomes clear to their students even at tutorial and makeup classes if it is not clear. But the previous one did not share this advantage to students because students can not get an opportunity of listening even one word if the direct transmission passes them once. Test result $t(259)=1.34$, $p=0.38$ which is >0.05 indicates, there is no significant difference in the response of teachers and students.

The mean score of both teachers and students for item number 5, 6 and 8 in table 9 above is below the average mean score of all items. This indicates that, the strength of the newly revised PTVP in terms of providing appropriate time for students to complete their activities based on the level of difficulty of item, presenting the lesson at normal speed and using understandable language (accent) respectively are moderately (sometimes) supporting both teachers and students to perform their roles. The calculated test result for item 5, 6 and 8 is also $t(259)=1.79$, 0.98 and 0.97 , $p>0.05$ for three of them indicates that there is in significant difference in the response of both group of respondents. Regarding this interview held with principals showed that, there is no visible change on the speed of presentation, allocating appropriate time for questions given as classroom activities and presenting the lesson by using understandable accent when compared with the previous PTVP.

In sum, the overall mean score of teachers and students for items prepared to find out the strength of the newly revised PTVP and to determine the extent to which these strengths support both teachers and students to perform their roles is 3.81 and 3.78 respectively. This indicates that, the strengths of the newly revised PTVP are highly supporting both teachers and students to perform their own roles. The overall standard deviation of both teachers and students response was 0.86 and 0.91 respectively. This in turn indicates that, the response of teachers is averagely 0.86 units far from their mean score (3.81) and the response of students is averagely 0.91 units far from their mean scores (3.78). This in turn indicates that, the response of teachers is less diverse than that of students. This means, teachers slightly selected almost similar response than students for the above items.

4.6. Factors Affecting PTVP Instruction

Many scholars identified different factors that affect integration of ITV in to classroom teaching and learning process and categorized them differently. To explore factors affecting PTVP instruction in Silte zone secondary schools and to measure the extent of their effect, different questions were distributed to respondents. Table 10 below summarizes the overall responses of respondents' in terms of mean and standard deviation.

Table -10 Respondents response concerning factors affecting PTVP instruction

No	To what extent does the following factors affect implementation of Plasma TV Instruction	Respondent	No	Mean	SD	T value	P value
1	Shortage of new plasma television that take CDs	Teacher	119	4.61	0.60	1.26	0.21
		Student	142	4.51	0.65		
2	Lack of equipment's like DVDs to use CDs	Teacher	119	4.76	0.43	1.78	0.076
		Student	142	4.64	0.59		
3	Lack of training (workshops) for teachers	Teacher	119	3.85	1.07	-0.26	0.80
		Student	142	3.88	0.93		
4	Lack of follow up (supervision) by stakeholders	Teacher	119	3.79	1.02	0.18	0.86
		Student	142	3.77	0.99		
5	Lack of timely maintenance of Plasma TVs	Teacher	119	4.31	0.76	1.37	0.17
		Student	142	4.18	0.75		
6	Teachers lack of attitude (readiness) to utilize PTV	Teacher	119	2.06	0.99	0.42	0.68
		Student	142	2.01	1.01		
7	Shortage of teachers teaching experience	Teacher	119	2.89	1.31	-0.12	0.91
		Student	142	2.91	1.11		
8	Low attitude of students towards the utilization of PTV for classroom instruction	Teacher	119	1.31	0.62	-1.66	0.099
		Student	142	1.46	0.84		
9	The existence of large number of students in one class	Teacher	119	3.22	0.90	0.92	0.36
		Student	142	3.10	1.16		
10	Pressure of national exam	Teacher	119	3.19	1.03	-0.53	0.60
		Student	142	3.24	1.14		
11	Mismatch between school time table allocation and PTV broadcast	Teacher	119	1.65	0.91	-0.67	0.50
		Student	142	1.73	0.96		
12	Shortage of electric power (breaking of electricity at the middle of the lesson)	Teacher	119	4.24	0.78	-0.39	0.70
		Student	142	4.28	0.78		

Scales; <1.49 – very slightly, 1.5-2.49- slightly 2.5-3.49 – moderately,
3.5-4.49 – highly; >4.5 – very extremely

Table 10 above indicates that, different factors affect PTVP instruction differently. This means, some factors indicated in the above table affect PTVPI slightly while others affect it extremely. For example, teachers response (mean=1.31) and students response (mean=1.46) regarding item 8 of table 10 indicates that, low attitude of students towards the utilization of PTVPI has very slight effects on the extent of PTVPI in the study area. This means, the attitude of students to learn through PTV at the present moment is very high because it helps them to practical see everything that are not possible to be brought by their classroom teacher in the absence of PTV and its ability of providing 20 minutes for classroom teacher and students help them to share their ideas deeply. The calculated test result $t(259) = -1.66, p=0.1$ also indicates that, there is no significant difference in the response of students and teachers. Regarding this, data obtained from interview shows that, students' interest to learn through PTV increased dramatically because teachers revise the day's lesson for almost 20 to 25 minutes after the PTVP broadcast is completed and this created good opportunity for students to get the lesson more clearly than the previous PTVP. As a result, students immediately accuse those teachers that do not utilize PTV for instruction. Towards this (MoE, 2005) stated that, 'still there is low level of confidence amongst a number of students on the benefit of PTV' (p. 21). On the same page it wrote that, secondary school students who can utilize satellite TV programs will increase to 100% at the end of 2014. Therefore, it is possible to say that, the objective of increasing number of students who have confidence of utilizing PTVP has been achieved even if it is not 100% as stated by MoE above. In opposite to the researchers finding, study conducted by Eyasu (2011) and Seid (2011) on attitude of students towards utilization of PTV in teaching learning process in the previous PTVP, showed that, students had negative attitude towards PTVP instruction and this is extremely affecting its implementation.

On the other hand, teachers response (mean=2.06 & 1.65) and students response (mean= 2.01 & 1.73) regarding item number 6 and 11 of table 10 respectively shows that, teachers attitude (readiness) to use PTV for classroom instruction and mismatch between PTVP broadcast time & the schools time table allocation were slightly affecting PTVP instruction in the study area. The calculated test result for both items $t(259) = 0.42, p=0.68$ and $-0.67, p=0.5$ respectively. This indicates that, there is no significant difference in the response of students and teachers for both items. Concerning teachers' extent of utilizing PTV (MoE, 2005) stated that, one of the main challenges concerning the use of PTV is low level of confidence amongst a number of teachers on the benefits of ICT. On the same page it also wrote that 'the percent of secondary school teachers who utilize the satellite TV programs for classroom instruction will increase to 100% at the end of

2014'' (p. 21). So, the above response of respondents indicated that, this objective of MoE might not be achieved because this study found out that teachers' attitude and shortage of educational experience on some teachers are still slightly affecting PTVPI in the study area. However, local study conducted by Abdulselem (2011) in the previous terminated PTV on its effectiveness for classroom instruction regarding teachers attitude found out that, teachers have extremely negative attitude for PTV. Concerning mismatch between school time table and PTV broadcast time, 11.1% of the observation result indicated that, there is mismatch between the schools timetable allocation and PTV broadcast time. Regarding this, most of the principals during interview also informed that;

One of the aims of using CD lessons is to increase flexibility and to reduce the mismatch between PTV broadcast time and school time table. So, this problem occurs rarely in schools and hence it has very slight effect on PTV instruction.

Therefore, from the discussion above, it is possible to generalize that, both the attitude of teachers and mismatch between the school time table allocation & PTV broadcast time are slightly affecting PTVPI in the study area.

The mean score of teachers and students is 2.89 and 2.91 for item 7 of table 10. This indicates that, lack of teaching experience on some teachers is moderately (sometimes) affecting PTV instruction in the study area. The computed test value $t(259) = -0.12$, $p = 0.91$ which is > 0.05 indicates that, there is no significant difference in the response of the two groups of respondents. Regarding this, the data obtained through interview from directors and supervisors seems;

All teachers utilize PTV in our school. But sometimes fresh teachers lack confidence of using PTV for instruction because they are enabling to manage and use the given time appropriately. That means, they do not facilitate conditions and communicate with their students within the given short time as ordered by plasma TV presenter when compared with the experienced teachers. As a result, most of the complains coming from students to the office indicates that, less experienced teachers want to teach by themselves rather than using PTV when compared with experienced teachers.

So, from this discussion, one can recognize that, the experience of teachers has its own effect on the level of PTV instruction and less experienced teachers tend to use PTV less than more experienced teachers in the study area. In opposite to this, Afshari (2009) found out that, teachers with fewer years of experience were more likely to use ICT in their classes than teachers with more

years of experience due to the fact that new teachers have been exposed to computers during their training and have more experience of using this tool. Similarly, Andoh (2012) found out that, experienced teachers are less ready to integrate ICT into their teaching than less experienced ones.

The mean score of teachers and students is 3.22 and 3.1 for item 9 of table 10. This indicates that, existence of large number of students in one class is moderately (sometimes) affecting PTVP instruction in the study area. The computed test value $t(259) = 0.92$, $p = 0.36$, which is > 0.05 indicates that, there is no significant difference in the response of the two groups of respondents. By supporting these, 5.6% of the observation result also indicates that, the number of tables and chairs is not sufficient for students. As a result of this, the seating style of students is not suitable to practice PTV instruction. Moreover, interview held with principals and supervisors regarding the number of students in one section indicated that;

the existence of large number of students (averagely 55) in one section affects the utilization of PTV because in some classes the number of chairs and tables may not be sufficient to students and this create tiredness' and feeling of sleep on students specially in the afternoon shift. Beyond this, classroom teachers can not follow and provide the necessary support to every student as a result of their large number because their sitting arrangement may not be suitable to practice PTV instruction.

So, from this discussion it is possible to say that the existence of large number of students in one class is sometimes affecting PTVP utilization in the study area. In line with this, study conducted by (Deutsch, 2003) showed that, students in smaller classes tend to have less discipline problems, spend more time engaging in learning tasks, receive more teacher attention, and be more active participating in the class. Additionally, study conducted by Fierros (2008) showed that smaller size classes result in better learning due to less discipline problems, fewer interruptions, students ask more questions and they develop a closer relationship with their teacher.

The mean score of teachers and students is 3.19 and 3.24 for item 10 of table 10. This indicates that, pressure of national exam is moderately (sometimes) affecting PTVP instruction in the study area. The computed test value $t(259) = -0.53$, $p = 0.6$ which is > 0.05 indicates that, there is no significant difference in the response of the two groups of respondents. Concerning this, data obtained through interview from school principals and supervisors informed that;

The effect of national exam on utilization of PTV is not that much common. But sometimes some students especially grade 10 that do not want to come to school initiate their classmates and try to put pressure on classroom teachers so that they turn of their PTV and teach by themselves in order to complete the portion of the book before the program of the government. This situation is a little beat common especially in second semester. So very few teachers might follow the interest of their student and perform it.

Hence, it is possible to say that, the pressure of national exam has moderate effect on PTV instruction and its effect is a little beat higher in second semester than first semester.

In general, from the above discussion one can analyze that, shortage of teachers teaching experience, existence of large number of students in one class and pressure of national exam are moderately affecting PTV instruction in Silte zone secondary schools.

Furthermore, the response of both teachers and students is greater than 3.5 for factors indicated in item number 3, 4, 5 and 12 of table 10. This indicates that, lack of training (workshops) for teachers, lack of follow up (supervision) by stakeholders, lack of timely maintenance of plasma TVs and shortage of electric power are highly affecting PTVPI in the study area. The calculated t test value for each item is also $t(259) = -0.26, 0.18, 1.37$ and -0.59 , at $p > 0.05$ respectively indicating that, there is no significance difference in the response of students and teachers for each item.

Concerning training data obtained through observation checklist also indicated that, 17.7% of the PTVs are not giving service but posted as a sample in the walls of classrooms. By supporting this, data obtained through interview from directors and supervisors revealed that;

Before 3 years there was timely work shop for teachers but now days it is possible to say there is no training (workshop) for teachers regarding PTV. In rare case workshop is given for only the PTV technician. I think the training given during the work shop is theoretical. As a result the PTV technicians are unable to solve the problems of maintenance service from its grass root. So, some of the PTVs are not functioning well because of lack of maintenance service. As a result of this, we sometimes shift students from one section to the other to provide them fair opportunity for all sections so that they get PTV lessons.

Thus, it is possible to analyze that, the issue of training is forgotten by the government and it is moderately affecting PTV instruction in the study area. Towards this, Andoh (2012) stated that, to maximize the benefit of integrating ICT in education schools that utilize ITV need to be provided with the necessary support services such as, supervision (inspection), training, experience share, teachers and students guide, CDs, DVDs and the like from broadcasters and/or associate organizations (regional, zonal or woreda bodies). In similar manner, Shanfu (2013) wrote that, besides, material support, technical support on how to operate, install, and give maintenance service should be given by the government to teachers to enhance their confidence of utilizing ITV in front of their students.

Regarding the shortage of electricity, the result of observation shows that, 66.7% of the schools have generators even if they are not standby and 25% of it is not functioning at this moment. In similar manner, principals and supervisors during interview argued that;

The issue of shortage of electric power is not the problem of only our school [D1]. Power breaks the most serious problem to use PTV [D2]. We have generators to reduce problems occurring as a result of electric shortage [D3]. Our generator is not on standby mood, until we put on (light) generators, some lessons are commonly interrupted [D4]. Shortage of financial power to buy kerosene is the problem of our school to use generator [D6].

So, from this discussion, one can recognize that, shortage of electric power is highly affecting PTVPI instruction.

In general, from the above discussion, one can generalize that, the lack of training (workshops) for teachers, lack of follow up (supervision) by stakeholders, lack of timely maintenance of plasma TVs and shortage of electric power are highly affecting PTVPI instruction in Silte zone secondary schools.

Lastly, teachers response (mean=4.61, 4.76) and students response (mean=4.51, 4.64) for factors indicated in item number 1 and 2 of table 10 above respectively shows that, shortage of new plasma television that take CDs and lack of DVDs to use CDs for instructional purpose are extremely affecting PTVPI instruction in the study area. The test value $t(259)=1.26$ and 1.76 , $p>0.05$ for both items respectively indicates that, there is no significant difference in the response of both groups. Regarding this, data obtained through observation also indicated that, all classes in all schools have sufficient number of PTVs even if most of them are the older ones that do not take CDs.

Concerning the availability of DVDs the result of observation showed that, DVDs are 100% absent in all schools of the study area. By supporting this, interview held with directors and supervisors informed that;

There are no DVDs in our school [all directors]. In our school there are only three new PTVs [D1]. There are new PTVs but not sufficient for all classes [D2, D3]. No new PTV in our school [D4].

So from the above discussion it is better to say the lack of DVDs and shortage of new PTVs that take CDs are extremely affecting PTVI in the study area. Towards this, MoE (2005) stated that, one of the main challenges concerning the use of PTV is serious shortage of plasma TV in emerging regions and lack of accessories for maintenance of plasma TV's in all regions. On the same page it also stated that, percent of secondary schools with complete broadcasting facilities will increase to 100% at the end of 2014. So, the researcher hesitates that this issue might not be real at the end of 2014 because this study showed that there are no PTVPI supportive materials in schools like PTVs, DVDs, generators and etc. Towards this, Shan Fu (2013) stated that, the higher technology availability, the higher the technology integration efforts are made by teachers to use it. Moreover, Andoh (2012) wrote that, effective adoption and integration of ICT into teaching in schools depends mainly on the availability and accessibility of ICT resources.

Beyond this, data obtained through open ended questionnaire from both students and teachers informed that, factors like lack of self-confidence on teachers, setting arrangement of the building (sections), lack of time to plan for instruction (credit overload) for teachers, low quality of PTV transmission, lack of commitment of the school towards the implementation process are affecting PTVP instruction in the study area.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This is the final part of the thesis that deals with the summary of the major findings, general conclusion drawn on the bases of the findings and recommendations which are assumed to be important to improve the status of PTVPI instruction in secondary schools of Silte Zone.

5.1. Summary of the Findings

ICT in general and ITV in particular can make learning effective and interesting if it is applied in a systematic approach and well planned manner. PTVPI like any other instructional technologies can be used in teaching. However, the PTVPI by itself does not bring improvements in learning unless it is used properly. What makes it fruitful is the way we use it. Thus, this research seeks to investigate current stakeholders (teachers, students, and principals) level of performing their roles in relation with PTVPI. Therefore, the study is aimed at assessing the current status of PTVPI in Silte zone secondary schools. In order to meet this purpose, the following basic research questions were designed;

- To what extent do teachers perform their role while integrating (utilizing) the newly revised PTVPI for classroom instruction in Silte zone secondary schools?
- To what extent do students play their own role during PTVPI instruction in the study area?
- To what extent do principals support the newly revised PTVPI instruction in the study area?
- How often does the strength of the newly revised PTVPI support teachers and students to perform their roles?
- What factors affect PTVPI instruction in Silte zone Secondary schools?

To answer these basic questions, the study was conducted in 6 secondary schools of Silte zone which were selected through the combinations of both simple random and available sampling technique. A total of 130 teachers and 6 supervisors were included by using available sampling technique while 12 principals were selected through the combination of both available and purposive sampling techniques. Moreover, 156 students were selected through stratified random

sampling. Data were obtained from the sample respondents through questionnaire, interview, and observation checklist. In doing this, 130 questionnaires were distributed to teachers and 156 questionnaires were distributed to students. But, 119 questionnaires from teachers and 142 questionnaires from students were properly filled and returned to the researcher.

In addition, semi-structured interview was conducted with 10 principals and 5 woreda level supervisors to enrich data obtained through questionnaire and to gain some additional information's that cannot be obtained through questionnaire. Moreover, classroom observation was conducted on three sections per the sample schools to obtain data regarding classroom situations, the activities of teachers and students at different stages of PTVP broadcast and to triangulate the data obtained through questionnaire. The data collected from teachers and students through closed ended questionnaire was analyzed and interpreted by using different statistical tools like percentage, mean, standard deviation, independent sample t-test, and one-way ANOVA. The analysis of the quantitative data is performed with the help of SPSS version 20 computer program. The data gathered through open ended questionnaire, and semi-structured interview was analyzed qualitatively using narration. After analyzing the result of data, the following major findings were identified;

- I. Regarding classroom teachers' level of performing their roles while utilizing PTV for instructional purpose.
 - For the roles of teachers that should be performed before the onset of broadcast time such as introducing the objective of the day's lesson to students, the mean score of teachers is 1.73 and students is 1.69. This indicated that, classroom teachers are rarely performing this role.
 - For the roles of teachers that is expected to be performed during the broadcast time such as motivating students to watch/follow up PTV lesson carefully, facilitating conditions for students to do in pair or group as ordered by the PTV presenter and assisting students to perform their task whenever students need teachers support, the mean score of both teachers and students is between 1.5 and 2.49. This implies that, classroom teachers are sometimes performing these activities.
 - Teachers and students response (mean between 2.50 and 3.49) for teachers level of performing activities such as encouraging students to read further by giving

supplementary activities beyond the activities given by the PTV teacher and revising /sum up the day's lessons by integrating it with students text book indicates that, classroom teachers are usually performing their activities to be performed after the completion of the broadcast time.

II. Regarding students' level of performing their roles.

- ▶ Students (mean=1.4) and teachers (mean=1.37) indicated that, students were rarely bringing their text books to classroom. In addition to this, teachers (mean=2.16 & 2.77 and students mean=2.04 & 2.68) for the extent to which students perform their roles such as consulting their classroom teachers to check the correctness' of their activity and participating in answering questions when raised by plasma teacher respectively indicates that, students are sometimes (moderately) performing these activities.
- ▶ The mean score of teachers and students is between 2.50 and 3.49 for students level of performing their roles such as paying attention to the presentations (explanation) given by the PTV teacher, showing motivation and following the lesson energetically, making effort to interact with their classmates while performing activities and asking their classroom teachers for further clarification if the plasma teacher's presentation is not clear. This situation indicates that, students are usually performing these activities.

III. Regarding principals' level of providing support for PTVP instruction.

- ▶ It was found out that, the mean score of teachers and students are between 2.50 and 3.49 for principals' extent of preparing time table on time by matching it with the PTVP broadcast time and providing CD lesson on time to teachers. This indicates that, principals are usually performing these activities. But, teachers response (mean=1.82, and 2.26) and students response (mean=1.81 and 2.43) for principals extent of providing awareness to students at the beginning of the year and following up the progress of PTVPI respectively indicates that, principals are sometimes performing these activities in the study area.

IV. Regarding the strengths of the newly revised PTVP and its extent of supporting both the teachers and students in performing their own roles.

- ▶ The mean score of both teachers and students is greater than 3.5 for the strengths of the newly revised PTVP such as accessibility (the existence of the lesson in the form of CDs), selectivity of the lesson for practical contents, providing more freedom for

classroom teachers and students to interact together (20 to 25 minutes) and matching the content of students' text book with PTV lesson. This indicates that, they are highly supporting both teachers and students in performing their roles. On another hand, teachers and students mean score is between 2.5 and 3.49 for the strengths of the newly revised PTVP such as using understandable language, providing appropriate time to do activities based on the level of their difficulty and presenting the lesson at normal speed. This also indicates that, these strengths are moderately supporting both teachers and students in performing their roles.

V. Regarding factors influencing PTVP instruction.

- Teachers response (mean=4.61 & 4.76) and students response (mean=4.51 & 4.64) indicated that, shortage of new PTVs that take CDs and lack of DVDs respectively are extremely affecting PTVPI in the study area. In addition to this, it was also found out that, teachers and students mean score is between 3.5 and 4.49 for the extent to which electric power break, lack of timely maintenance of PTVs, insufficiency of training and insufficiency of follow up by stakeholders affect PTVPI. This indicates that, the above factors are highly affecting PTVPI in the study area.

5.2. Conclusions

It was found out that, classroom teachers and principals were moderately (sometimes) performing their roles while students were usually performing their roles. In addition to this, it was also found out that, the strengths of the newly revised PTVP are highly supporting both teachers and students in performing their roles and factors inherited with the revision of PTVP are extremely affecting its implementation in Silte zone secondary schools. Therefore, it is possible to conclude that, status of PTVPI in Silte zone secondary schools is moderate.

To clarify more, the following conclusions were drawn based on the findings of the study in line with the basic research questions.

- The findings of the study shown that, classroom teachers' extent of performing their role has slight difference at different stages of PTV broadcast. That means, they were performing their roles less (almost rarely) that is expected from them before the onset of the broadcast time while they were performing their roles better (usually) after the completion of the broadcast time. In addition to this, it is found out that, their level of performing their roles at the time of broadcast was moderate. Hence, the sum of these

situations leads us to the conclusion that, classroom teachers' extent of performing their roles while integrating PTV for instructional purpose is moderate.

- ➔ The finding of the study shown that, students were usually performing their tasks especially at the time of broadcast and after the completion (end) of broadcast. Thus, the sum of these findings take us to the generalization that, students are usually performing their roles during PTVP instruction.
- ➔ According to the data obtained during the analysis, principals are moderately (sometimes) supporting PTVP instruction in the study area.
- ➔ The strengths of the newly revised PTVP in terms of its flexibility, its accessibility, its selectivity for practical contents, its ability of providing more freedom for classroom teachers and students to interact together (20 to 25 minutes), and being designed in a way that highly matches the content of students text book are highly supporting both teachers and students to perform their roles while utilizing PTV for instructional purpose. But, the strength of the newly revised PTVP in terms of providing appropriate (proportional) time for activities, using clear language (accent) and presenting the lesson in normal speed are less likely supporting students and teachers in performing their roles.
- ➔ It was found out that many factors are affecting PTVPI in the study area. Among them shortage of new PTVs that take CDs and lack of DVDs are extremely affecting PTVPI in the study area. In addition to this, it is also possible to conclude that, electric power break, lack of timely maintenance of PTVs, insufficiency of training and insufficiency of follow up by stakeholders are highly affecting PTVPI in the study area.

5.3. Recommendations

Based on the findings of the study, the following recommendations were made:

1. It was found out that, classroom teachers were less able to perform their roles before the onset of the broadcast time and usually performing their roles after the completion of the broadcast time. Therefore, it is advisable that; classroom teachers need to identify each and every role that should be performed at different stages of PTV broadcast time and perform it strictly as stated in the plasma guide. Moreover, the woreda and zone education bureau need to attentively follow up the teachers progress PTVP instruction in collaboration with school principals and provide timely training on the issue. In doing so, the training need to focus on

the benefits of utilizing PTV for instructional purpose and mechanisms of tackling different problems that classroom teachers face at different stages of PTV broadcast time.

2. In the study, students' extent of performing their role was found to be less before the broadcast starts than during and after the broadcast. Hence, it is recommended that, students need to identify their expected roles and actively perform it at different stages of PTV broadcast as stated in plasma guide. In addition to this, it would be better if classroom teachers follow up each and every activity of students at different stages of broadcast and provide the necessary support to them. Moreover, it is recommended that, school leaders need to work hard in creating awareness so that students by themselves take responsibility in identifying and performing their roles at each stage of PTV broadcast time by using different stages like preparing formal meeting and at the time of flag ceremony.
3. It is found out that, secondary school principals were sometimes (moderately) supporting PTV instruction. Therefore, it is advisable that, regional, zonal and woreda educational stakeholders need to follow up the progress of school principals' extent (status) of providing their support and arrange special training program for them. In doing so, the training program need to focus on the importance of utilizing ITV for instructional purpose, mechanisms of providing awareness to both teachers & students and mechanisms of fulfilling the require materials for PTVPI.
4. The study explored out that, the newly revised PTVP has much strength. So, it is recommended that, these strengths need to continue in the future and further modification need to be done on the area of avoiding one way communication, allocating appropriate time for activities based on their level of difficulty and substituting some foreign plasma presenters by local teachers because the accent of their language is not sometimes clear to students.
5. It is found out that;
 - Government support facilities (both material and technical) such as lack of DVDs, new PTVs, generators, training, maintenance service of PTVs
 - Teachers and students personal characteristic's such as their attitude, teachers experience
 - School climate factors such as large number of students in one class are affecting PTVI.So, it would have been better if;

- ✓ Government provides all the above material and technical supports by participating the community, non-governmental organizations (NGO's) and parents of students.
- ✓ School principals reduce the number of students in one class by increasing the number of sections and fulfilling the necessary materials like tables and chairs by communicating and participating the community as well as the concerning government stakeholders.

Recommendations for Further Study

Though this research tried to assess the current status of PTVPI in secondary schools of Silte zone and tried to fill some gaps regarding PTVI, there are still some remaining areas that are unexplored. Therefore, the followings are suggested for future studies;

- ➡ The existing differences/relationships in teachers' level of integrating PTV and their personal background like sex, age and educational experience (service year) were investigated but needs further investigation.
- ➡ This research focused on determining the status of PTVPI but it did not consider the impact of PTVI upon students' academic performance (achievement). Thus, it is advisable for any interested future researcher to study the impact of PTVPI and on students' academic achievement.
- ➡ The participants of this study were general secondary school students, teachers, principals and supervisors (grades 9 and 10). So, similar study may be carried out on preparatory school students (grades 11 and 12).
- ➡ This study was limited to six secondary schools found in Silte zone. But, it would have been more comprehensive and generalizable if more schools from other areas had been included in the study. Therefore, further research that might support (make this study more detailed and comprehensive) or reject the findings of this study is needed in the area.

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Appendix A

Jimma University

Institute of Education and Professional Development Studies

Department of Teacher Educational & Curriculum Studies

Questionnaire to be filled by secondary school teachers

General Directions

Dear Respondents: the ultimate purpose of this questionnaire is to assess status of the newly revised plasma television program instruction in Silte zone secondary schools. Hence, the success of this study directly depends upon your honest and genuine response to each item. Therefore, I kindly request you to fill this questionnaire openly. Each data you supply will be used only for the purpose of academic issue and also treated with utmost confidentiality. Since your answers will be treated with the strictest care, feel free to answer all questions frankly.

Thank you for your patience and cooperation in advance!

Note:

- No need of writing your name.
- If you need extra support, ask the data collector

Part I: This part of the questionnaire contains personal background information; please fill the necessary answers for each item properly by putting \surd or **X** in the space/box provided.

1. Woreda _____ . School name: _____

2. Grade level current you are teaching Grade 9 Grade 10 both grades

3. Gender (sex): male female

4. Age

21-25	26-30	31-40	41-50

ASSESSING THE STATUS OF NEWLY REVISED PTVPI

5. Service year (work experience)	Bellow 1	1-5	6-10	11-15	16 and above

6. Level of Education (Qualification)	Certificate	Diploma	1 st degree	2 nd degree	Above 2 nd degree

Part II: This part of the questionnaire contains both close ended and open ended items that focus on the main issue related with plasma television program instruction under investigation. Based on the concept of each item, please try to select the options that directly represent your own position and fill it on the space provided accordingly. Similarly, write brief answer for open ended questions.

1. Items related with the extent to which actual classroom teachers perform their roles while utilizing plasma television for classroom instruction.

Direction: Please read the items in the table below and put an ‘X’ in the box that best describes your own impression.

Key for numbers; 0 –Never; 1 – Rarely 2 – Sometimes; 3- Usually; 4 – Always;

No	Description	Scales				
		0	1	2	3	4
I	To what extent do you (as a classroom teacher) perform the following activities					
1	Teach by yourself without opening PTV					
2	Introduce the objective of the days lesson at the beginning					
3	Motivate students to watch/follow Plasma TV lesson carefully					
4	Facilitate conditions for students to do in pair/group as ordered by the PTV teacher					
5	Follow up whether students complete their task/activity or not					
6	Assist students to perform their task whenever they need your help					
7	Give feedback to students					
8	Leave the class as soon as the PTV presenter stops (complete) the day’s lesson.					
9	Revise /sum up the day’s lessons by integrating it with the textbook					
10	Encourage students to read further by giving supplementary activities beyond the activities given by the Plasma TV teacher					
	Please mention if any more-----					

ASSESSING THE STATUS OF NEWLY REVISED PTVPI

2. Items related with the extent to which students perform their role in effectively implementing Plasma TV program.

Key for numbers; 0 –Never; 1 – Rarely 2 – Sometimes; 3 – Usually; 4 – Always

No	Description	Scales				
		0	1	2	3	4
	To what extent do students perform the following activities					
1	Come to class by having text books					
2	Make effort to do tasks as instructed by the plasma teacher or you					
3	Pay attention to the presentations (explanation) given by the plasma TV or you					
4	Show motivation and follow the lesson energetically					
5	Make effort to interact with their classmates in doing activities					
6	Consult you to check the correctness' of their activity					
7	Do not feel sleep, laziness, bored					
8	Ask you for further clarification if the plasma teacher's presentation is not clear					
9	Participate in answering questions when raised by plasma teacher					
	Please mention if any more-----					

3. Items related with the extent to which principals support implementation of PTPV instruction.

Key to numbers; 0 –Never; 1 – Rarely 2 – Sometimes; 3 – Usually; 4 – Always;

No	Items/indicators	Scales				
		0	1	2	3	4
I	To what extent do your school principals perform the following activities					
1	Aware students especially those who enter grade 9 at the beginning of the year.					
2	Prepare schedule (time table) on time at the beginning of the year.					
3	Match the schools schedule (time table) with Plasma TV broadcast time.					
4	Follow up your progress of implementing Plasma TV (supervision)					
5	Take measure on teachers that do not use Plasma TV as intended					
6	Make effort to prepare workshops by communicating with the Zonal education bureau					
7	Provide the lesson in the form of CDs to you on time as necessary					
8	Make effort to fulfill materials like DVDs, remote controls, dividers generators and etc by communicating with the zonal and/woreda educational officials					
	Please mention if any more-----					

4. Items related with the extent to which the strengths of the newly revised Plasma TV program helped classroom teachers to perform their roles (Utilize PTV during classroom instruction).

Directions; the following items are related with the strength of the newly revised PTV lessons. Please put X on the option that best represents your feeling (stand point) in the space provided.

Key to numbers:

1= Very Slightly; 2= Slightly; 3= Moderately; 4=Highly; 5= Very Highly

No	To what extent does the following strengths of the newly revised PTVP helped you to perform your roles	Scale				
		1	2	3	4	5
1	Its accessibility (existence of the lesson in the form of CDs so that teachers can see it at their homes).					
2	Its selectivity in terms of content to be taught (being designed for practical contents)					
3	Its ability of providing more freedom for you and your classroom teachers to interact together (20 minutes)					
4	Being designed in a way that highly matches (fits) the content of text book					
5	Its ability of giving more time for students to complete activities/exercises.					
6	Being designed in a way that presents the lesson at normal speed (The speed of PTV presenter is not to very fast)					
7	Its flexibility so that teachers demonstrate it when even needed even after the direct transition is over (during the tutorial class, it can be paused whenever needed for more clarification).					
8	Its ability of using understandable language					
	Please mention if any more-----					

5. Items related with factors affecting implementation of plasma television lesson instruction.

Direction: the following items are related with factors affecting implementation of Plasma TV.

Please put X in the box provided in front of the item if you think (agree) that the factor commonly affects you from implementing PTV program in your school.

Key for numbers

1-very slightly, 2-Slightly, 3-Moderately, 4-Highly, 5-Very highly

No	To what extent does the following factors affect implementation of Plasma TV Instruction	Scale				
		1	2	3	4	5
1	Shortage of new plasma television that take CDs					
2	Lack of equipment's like DVDs to use CDs					
3	Lack of training (workshops) for teachers					
4	Lack of follow up (supervision) by stakeholders					
5	Lack of timely maintenance of Plasma TVs					
6	Teachers lack of attitude (readiness) to utilize PTV					
7	Shortage of teachers teaching experience					
8	Low attitude of students towards the utilization of PTV for classroom instruction					
9	The existence of large number of students in one class					
10	Pressure of national exam					
11	Mismatch between school time table allocation and PTV broadcast					
12	Shortage of electric power (breaking of electricity at the middle of the lesson)					
	Please mention any more if not addressed----- -----					

Appendix B

Jimma University

Institute of Education and professional Development Studies

Department of Teacher Educational & Curriculum Studies

Questionnaire to be filled by students

General Directions

Dear Respondents: the ultimate purpose of this questionnaire is to assess status of the newly revised plasma television program implementation in Silte zone secondary schools. Hence, the success of this study directly depends upon your honest and genuine response to each question. Therefore, I kindly request you to fill this questionnaire openly and voluntarily. Each data you supply will be used only for the purpose of academic issue and also treated with utmost confidentiality. Since your answers will be treated with the strict care feel free to answer all questions frankly.

Thank you for your patience and cooperation in advance!

Note;

- Do not write your name
- If you need extra support, Ask the data

Part I: Personal background information; please fill the necessary answers for each item by putting \surd or **X** in the box provided.

1. Name of your school _____ Woreda _____

2. Grade 9 10

3. Gender (sex) Male Female

4. Age

15-20	21-15	26-30
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ASSESSING THE STATUS OF NEWLY REVISED PTVPI

Part II: This part of the questionnaire contains both close ended and open ended items that focus on PTV program under investigation. Based on the concept of each item, please try to select the options that directly represent your own position and fill it on the space provided accordingly. Similarly, write brief answer for open ended questions.

Direction: Please read the items in the table below and put an ‘X’ in the box that best describes your own impression.

Note: **Key to numbers:** 4 – Always; 3 – Usually 2 – Sometimes; 1 – Rarely; 0 –Never

Number	Description	Scale				
		Never	Rarely	Sometimes	Usually	Always
I	To what extent does your classroom teachers perform the following activities	0	1	2	3	4
1	Teach by themselves without opening PTV					
2	Introduce the objective of the lesson at the beginning					
3	Motivate you to watch/follow the PTV lesson carefully					
4	Facilitate conditions for students to do in pair and /or group as ordered by the PTV presenter					
5	Follow up whether you complete your task/activity or not					
6	Assist you to perform your tasks whenever you need their support					
7	Give feedback to you					
8	Leave the class as soon as the PTV presenter stops (complete) the day’s lesson.					
9	Revise /sum up the days lessons by integrating it with the textbook					
10	Encourage you to read further by giving supplementary activities beyond the activities given by the PTV teacher					
II	To what extent do you perform the following activities	0	1	2	3	4
1	Come to class by bringing your text books					
2	Make effort to do tasks as instructed by the plasma teacher or the classroom teacher					
3	Pay attention to the presentations (explanation) given by the plasma TV or the classroom teacher					
4	Show motivation and follow the lesson energetically					
5	Make effort to interact with your classmates while performing activities					
6	Consult classroom teacher to check the correctness’ of activities					

ASSESSING THE STATUS OF NEWLY REVISED PTVPI

7	Do not feel sleep, laziness, bored					
8	Ask your classroom teacher for further clarification if the plasma teacher's presentation is not clear					
9	Participate in answering questions when raised by plasma or classroom teachers					
III	To what extent does your school principals perform the following activities	0	1	2	3	4
1	Aware students specially those who enter grade 9 at the beginning of the year					
2	Prepare schedule (time table) on time at the beginning of the year.					
3	Match the schools schedule (time table) with PTV broadcast time.					
4	Follow up teachers progress of implementing PTV (supervision)					
5	Take measure on teachers that do not use PTV as intended					

2. Items related with the extent to which the strengths of the newly revised Plasma TV program helped you to enjoy it and perform the expected roles.

Directions; the following items are related with the strength of the newly revised PTV lessons.

Please put X on the option that best represents your feeling (stand point) in the space provided.

Key to numbers: 1= Very Slightly; 2= slightly; 3= moderately; 4=Highly; 5= Very Highly

No	To what extent does the following strengths of the newly revised PTVP helped you to perform your roles	Scale				
		1	2	3	4	5
1	Its accessibility (existence of the lesson in the form of CDs so that teachers can see it at their homes).					
2	Its selectivity in terms of content to be taught (being designed for practical contents)					
3	Its ability of providing more freedom for you and your classroom teachers to interact together (20 minutes)					
4	Being designed in a way that highly matches (fits) the content of text book					
5	Its ability of giving more time for students to complete activities/exercises.					
6	Being designed in a way that presents the lesson at normal speed (The speed of PTV presenter is not to very fast)					
7	Its flexibility so that teachers demonstrate it when even needed even after the direct transition is over (during the tutorial class, it can be paused whenever needed for more clarification).					
8	Its ability of using understandable language (accent)					

3. Items related with factors affecting Plasma television program instruction (TVPI).

Direction: the following items are related with factors affecting implementation of PTV. Please put **X** in the box provided in front of the item if you think (agree) that it commonly affect implementing PTV program in your school.

Key for numbers: 1-very slightly, 1-Slightly, 2-Moderately, 3-Highly, 4-Very highly

No	To what extent does the following factors affect implementation of Plasma TV Instruction	Scale				
		1	2	3	4	5
1	Shortage of new plasma television that take CDs					
2	Lack of equipment's like DVDs to use CDs					
3	Lack of training (workshops) for teachers					
4	Lack of follow up (supervision) by stakeholders					
5	Lack of timely maintenance of Plasma TVs					
6	Teachers lack of attitude (readiness) to utilize PTV					
7	Shortage of teachers teaching experience					
8	Low attitude of students towards the utilization of PTV for classroom instruction					
9	The existence of large number of students in one class					
10	Pressure of national exam					
11	Mismatch between school time table allocation and PTV broadcast					
12	Shortage of electric power (breaking of electricity at the middle of the lesson)					
	Please mention any more if not addressed----- -----					

Appendix C Amharic Version of Students' Questionnaire

ጅማ ዩኒቨርሲቲ

የትምህርትና ሙያ ማበልፀጫ ጥናት ተቋም

የማምህራን ትምህርትና የሥርዓተ ትምህርት ጥናት ትምህርት ክፍል

ለተማሪዎች የተዘጋጀ መጠይቅ

አጠቃላይ መመሪያ

የዚህ ጥናት ዋናው ዓላማ አዲሱና በቅርቡ ተሻሻለው የፕላዝማ ፕሮግራም አተገባበር በምን ደረጃ ላይ እንደሚገኝ ለማወቅ ነው። በመሆኑም የዚህ ጥናት ውጤተማነት በእንናንተ ቀና ምላሽ የሚወሰን ይሆናል። ስለዚህ ይህንን መጠይቅ በፍቃደኝነትና በቀናነት እንድትሞሉ በትህትና እንጠይቃለን። ለመጠይቁም የሚትሰጡት መረጃ ሁሉ በሚስጥር የሚያዝና ለጥናቱ ዓላማ ብቻ የሚውል ስለሆነ ስጋት አይግባችሁ።

ለትብብራችሁ በቅትሚያ አመሰግናለሁ!

ማስተ- ሻ፤

- ❖ ስም መጻፍ አያስፈልግም
- ❖ እገዛ ከስፈለገዎት መረጃ ሰብሳቢውን ይጠይቁ

ክፍል አንድ፤ የግለሰብ ማንነት መረጃ

መመሪያ አንድ፡ ለሚከተሉት ጥያቄዎች ተገቢውን ምላሽ በተሰጠው ቦታ ላይ ሙሉ።

1. ወረቀት ስም _____ የት/ቤቱ ስም _____
2. ስድስት ወራት 9 10
3. የታ ወንድ ሴት
4. ክትማ

15-20	21-25	ከ 26 በላይ
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1. የክፍል መ/ራን ምን ዓይነት ፕላዝማ ቴሌቭዥንን በመጠቀም ረገድ የራሳቸውን ድርሻ

እንደሚወጡ በተመለከተ

መመሪያ፡ እያንዳንዱን ጥያቄ በማንበብ መለኪያ በሚል ስር (ከጥያቄው ፊት ለፊት) በተሰጠው ቦታ ላይ ሙሉ

- አስተዋሉ፤
- | | | |
|-----------|---------------|------------|
| 4-ሁል ቶታ | 3-አብዛኛውን ጊዜ | 2-አንዳንድ ጊዜ |
| 1-አልፎ አልፎ | 0- ምንም (በጭራሽ) | |

ተ.ቁ	የክፍል መ/ራችሁ ምን ያህል	መለኪያ				
		0	1	2	3	4
1	ፕላን ማተራሪያ ቤቱን ዘግተዋል። በራሳቸው <input type="checkbox"/> ስተምራሉ					
2	የዕለቱን ት/ት ከመጀመሪያው በፊት የት/ቱን ዋና ዓላማ ያሳውቃሉ					
3	የፕላን ማወቅን ት/ት በትኩረት <input type="checkbox"/> ስንዲትከታተሉ ያነሳሳሉ					
4	<input type="checkbox"/> ላይ ማመልከት በሚያዘችሁ መሰረት በጥንድ/በቡድን ስራችሁን ስንድትሰሩ የክፍሉን ሁኔታ ያመቻቻል					
5	በአል ስንዲትሰሩ <input type="checkbox"/> ሚሰጣችሁን መልመጃዎች መጨረስ አለመጨረሳችሁን ይከተተላል					
6	ጥያቄዎችን ሲትሰሩና የስነ ምግባርን ስንዲትሰሩ ጊዜ ይረዳሉ					
7	በሚትሰሩት ስራ ላይ አስተያየት ይሰጣሉ					
8	የዕለቱ የፕላን ማተራሪያ ቤቱን ስንዲትከታተሉ ወዲያውኑ ክፍሉን ለቀው ይወጣሉ					
9	በየዕለቱ መጨረሻ ላይ የዕለቱን ት/ት ክለሳ ያደርጋል					
10	<input type="checkbox"/> ላይ ማመልከት ከሚሰጣችሁ ጥያቄዎች በተጨማሪ ሌሎች ጥያቄዎችን በመስጠት የበለጠ ስንዲትከታተሉ <input type="checkbox"/> በረታታሉ					

2. ተማሪዎች ምን ያህል የራሳቸውን የስራ ድርሻ ስንዲትሰሩ በተመለከተ

አስተዋሉ:

4-ሁል ቱ	3-አብዛኛውን ጊዜ	2-አንዳንድ ጊዜ
1-አልፎ አልፎ	0-ምንም(በጭራሽ)	

ተ.ቁ	ፍጹም መጠን	መለኪያ				
		0	1	2	3	4
I	ስንዲትከታተሉ ምን ያህል የሚከተሉትን ተግባራት ተከናውናላችሁ					
1	የመማሪያ መጽሐፍቶችን ይዛችሁ ወይ ት/ቤት ትመጣላችሁ					
2	በክፍል ወይም በፕላን ማተራሪያ ቤቱ የተነገራችሁን ተግባራት ለማከናወን ጥረት ተደርጋላችሁ					
3	በፕላን ማተራሪያ ቤቱ የሚሰጣችሁን ማብራሪያ በጥሞና ትከታተላላችሁ					
4	<input type="checkbox"/> ላይ ማመልከት በጥሩ ሞራልና ሀይል በተሞላ መንፈስ ትከታተላላችሁ					
5	መልመጃዎችን ስትሰሩ መ/ራ በሚያዘው መሰረት ክፍል ጎደኞቻችሁ ጋር ወይይት ተደርጋላችሁ					
6	የሰራችሁትን ጥያቄ ትክክል መሆናችሁን ለማረጋገጥ የክፍል መ/ራችሁን ተማክራላችሁ					

7	<input type="checkbox"/> ከንቅልፍ፣ የድክምና የድብርት ስሜት አይሰማችሁም					
8	<input type="checkbox"/> ላላማ መ/ሩ አቀራረብ ግልፅ ከልሆነ የክፍል መ/ሩን ለበለጠ ማብራሪያ ትጠይቃላችሁ					
9	በፕላን ማመ/ር የሚነሱ ጥያቄዎችን በመመለስ ተሳትፎ ተደርጋላችሁ					

3. የት/ቤቱ ርዕሰ መ/ራን የፕላን ፕሮግራምን አተገባበር ምን ያህል ስንደሚደግፉ በተመለከተ

አስተዋሉ:

4-ሁል ደብ 3- አብዛኛውን ጊዜ 2-አንዳንድ ጊዜ
 1-አልፎ አልፎ 0-ምንም(በጭራሽ)

ተ.ቁ	የት/ቤቱ ርዕሰ መ/ራን ምን ያህል የሚከተሉትን ተግባራት ያከናውናሉ	መለኪያ				
		0	1	2	3	4
1	በዓመቱ መጀመሪያ በተለይም አድስ 9ኛ ክፍል ለሚገቡ ተማሪዎች የፕላን ማመ/ርን በተመለከተ ቅድሚያ ግንዛቤ ይሰጣሉ					
2	በዓመቱ መጀመሪያ ክፍለ ጊዜን በጊዜ አዘጋጅተዋል ያሳውቃሉ					
3	የክፍለ ጊዜውን አመዳደብ ከፕላን ማመ/ር ስርጭት ሰዓት ጋር ያዛምዳሉ					
4	የት/ቤቱ መ/ራን ፕላን ማመ/ርን አለመጠቀማቸውን ይከታተላሉ					
5	ፕላን ማመ/ርን በማይጠቀሙ መ/ራን ላይ ስርምጽ ወስኑ					

4. የአድሱ ፕላን ጭራሽን ፕሮግራም ጠንካራ ጎኖች ምን ያህል ስናንተ ፕሮግራሙን ስንዲትወዱትና

የራሳችሁን ድርሻ ስንዲትወጡ ይረዳችሁዋል።

አስተዋሉ:

1-በጣም በትንሹ 2-በትንሹ 3-በመንከለኛ ሁኔታ
 4-በከፍተኛ ሁኔታ 5-አጅግ በጣም በከፍተኛ ሁኔታ

ተ.ቁ	የሚከተሉት የአድሱ ፕላን ጭራሽን ፕሮግራም ጠንካራ ጎኖች ምን ያህል ስናንተ ፕሮግራሙን ስንዲትወዱትና የራሳችሁን ድርሻ ስንዲትወጡ ይረዳችሁዋል	መለኪያ				
		1	2	3	4	5
1	በቀላሉ በ CD መልኩ የሚገኝ መሆኑ					
2	ስንደየአስፈላጊነቱ ለአንዳንድ/ለተወሰኑ ቶፊኮች ብቻ መገኘቱ					
3	ክፍል መ/ሩና ተማሪዎቹ ሀሳብ አንዲለዋወጡ የበለጠ/በቂ ሰዓት መስጠቱ					
4	ከተማሪዎች መማሪያ መጽሐፍ ጋር በጣም የተዛመደ መሆኑ					
5	ተማሪዎች መልመጃዎችን አንዲጨርሱ በቂ ሰዓት መስጠቱ					
6	ት/ቱን በመከከለኛ ፍጥነት ስንዲያስተላልፍ ተደርጎ መዘጋጀቱ					
7	ግትር አለመሆኑና (ቅጥር ታታሪ ጭንቀት ከተጠናቀቀም በጣም ለመጠቀም ምቹ መሆኑ)					
8	መምህራንን የስራ ጫና ማቃለል መቻሉ					

5. የፕላንና ት/ትን ከመተግበር የሚያደናቅፉ ነገሮች

መመሪያ፤ የፕላንና ፕሮግራም አተገባበርን ሊያደናቅፉ ይችላሉ ብላችሁ በሚትገምቱት ነገሮች የናንተን አ ም በተሰጠው ቦታ ላይ ሙሉ::

አስተዋሉ፤

- 1-በጣም በትንሹ
- 2-በትንሹ
- 3- በመንከለኛ ሁኔታ
- 4-በከፍተኛ ሁኔታ
- 4-ከጅም በጣም በከፍተኛ ሁኔታ

ተ.ቁ	የፕላንና ቴሌቫዥንን አተገባበርን ምን ያህል ሊያስተገቡ ይችላሉ	መለኪያ				
		1	2	3	4	5
1	ሲዲን የሚወስዱ የአዳዲስ ፕላንና ተራቭዥን እጥረት					
2	<input type="checkbox"/> DVD ዎች እጥረት					
3	ለመምህራን የስልጠናና የወርክሾፕ አለመኖር					
4	የሚመለከተኛው አካላት የክትትል ማካሄድ					
5	በየወቅቱና እንደየአስፈላጊነቱ የፕላንና TV ጥገና አለመኖር					
6	የመ/ራን አመለካከት በላይ ላይ TV ላይ <input type="checkbox"/> ቅተኛ መሆን					
7	የመ/ራን የማስተማር ልምድ ማካሄድ					
8	የተማሪዎች በፕላንና የመማር ፍላጎት ዝቅተኛ መሆን					
9	ከአተኛ ቁጥር ያለው ተማር በአንድ ክፍል ውስጥ መገኘት					
10	የመልቀቂያ/የማትርክ ፈተና ግፊት					
11	የት/ቤቱ ክፍለ ጊዜና የፕላንና ስርጭት ሰዓት አለመሙሙ					
12	የኤሌክትሪክ ሀይል ማካሄድ/መቆራረጥ					

Appendix D

Jimma University

Institute of Education and professional Development Studies

Department of Teacher Educational & Curriculum Studies

Observation checklist

General Directions

This checklist is prepared to obtain information regarding the current status of PTV program implementation in secondary schools. It focuses on school climate, role of students and teachers.

School Observed: _____ Date: _____

Class Observed: Grade ____ Time ____ Topic of lesson _____

Number of students in class: _____

Instruction: Please read the items, and put an 'X' in the box that is correct about the school climate you observed.

No	Point to be observed (Item)	Yes	No	Remark
1	Every room has PTV			
2	CD lessons are available.			
3	The plasma TV is planted in suitable (convenient) position for all students.			
4	The number of tables and chairs is sufficient for students.			
5	Seating style of students is suitable to practice the plasma lessons.			
6	Plasma TV is functioning well.			
7	The schedule (weekly time table) fit with the PTV transmission time.			
8	Dividers and remote controls are available.			
9	DVDs are available			
10	Generators are available			
	Please add if you have any other comments on physical setting of school....			

Part 2: Items related with the activities of classroom teacher and students.

Key to numbers: **0-never** **1-rarely** **2-sometimes** **3-usually** **4-always**

No	Description	0	1	2	3	4
1	Students brought their text books, exercise books and pens					
2	Students make effort to do tasks as instructed by the plasma teacher or the classroom teacher					
3	Students pay attention to the presentations (explanation) given by the plasma TV or classroom teacher					
4	Students show motivation or follow the lesson energetically					
5	Students feel sleep, laziness, bored					
6	Classroom teachers introduce the days lesson and its objective at the beginning					
7	Classroom teacher motivate (encourage) students to accomplish their task and/or to watch the program carefully					
8	Classroom teachers assist students to perform their task whenever they need his help					
9	Classroom teachers facilitate the classroom situations for students to do in pair or group as ordered by the PTV presenter					
10	Classroom teachers follow up whether students complete their task/activity or not					
11	Classroom teachers give feedback to students					
12	Classroom teachers revises the days lessons by integrating it with the textbook					
13	Classroom teachers encourage students to read further by giving supplementary activities beyond the activities given by the PTV teacher					

Appendix E

Jimma University

Institute of Education and professional development studies

Department of Teacher educational and curriculum studies

Semi-structured interview guidelines for secondary school principals

The main objective of this interview is to collect extensive information about PTVPI instruction. Since your contribution and genuine participation to give necessary data for this study has great importance, you are kindly asked to respond this interview. Be sure that your responses are kept confidential.

Thank you for your cooperation in advance!

Part one: Personal background information

Name of woreda: _____

Sex: _____ Age: _____. Level of Education: _____. Experience: _____

Part two: Give short and precise response to the questions raised by the researcher.

1. Could you please explain the reason why the previous PTVPI was revised in 2003 E.C?
2. In your opinion, what are the major factors that affect implementation of PTVPI at present situation? Focus on students and teacher's activity (characteristics), school climate, and government support.
3. To what extent does the government support implementation of the newly revised PTVPI? Please focus on provision of necessary facilities such as CDs, DVDs, and teachers training through workshops and to what extent are teachers using CDs to make the lesson more effective?
4. To what extent do you support PTVPI in terms of providing awareness for students, preparing schedule, following up teachers' progress of utilizing PTVPI and fulfilling materials required for PTVPI?
5. Would you please mention some strengths of the newly revised PTVPI system? If so, to what extent does it facilitate implementation of the program?
6. In general, to what extent do you think teachers are utilizing PTVPI during classroom instruction?

Appendix F

Jimma University

Institute of Education and professional development studies

Department of Teacher educational and curriculum studies

Semi-structured interview guidelines for secondary school supervisors

The main objective of this interview is to collect extensive information about PTVPI instruction. Since your contribution and genuine participation to give necessary data for this study has great importance, you are kindly asked to respond this interview. Be sure that your responses are kept confidential.

Thank you for your cooperation in advance!

Part one: Personal background information

Name of woreda: _____

Sex: _____ Age: _____. Level of Education: _____. Experience: _____

Part two: Give short and precise response to the questions raised by the researcher.

1. Could you please explain the reason why the government of Ethiopia introduced plasma mode of instruction at the beginning of 1997 E.C? What is the reason behind revising the previous PTVPI in 2003 E.C?
2. To what extent do you think secondary school principals are supporting PTVPI? Please focus on extent of providing awareness for students, preparing schedule, following up teachers' progress of utilizing PTVPI and fulfilling materials required for PTVPI?
3. In your opinion, what are the major factors that affect implementation of PTV at present situation? Focus on students and teacher's activity (characteristics), school climate, and government support.
4. To what extent does the government support implementation of the newly revised PTVPI? Please focus on provision of necessary facilities such as CDs, DVDs, and teachers training through workshops and to what extent are teachers using CDs to make the lesson more effective?
5. Would you please mention some strengths of the newly revised PTVPI system? If so, to what extent does it facilitate implementation of the program?
6. In general, to what extent do you think teachers are utilizing PTVPI during classroom instruction?

Appendix G

Krejcie & Morgan (1970) formula that was used to determine the sample size of students and teachers

$$s = \frac{X^2 NP(1-P)}{d^2(N-1) + X^2 P(1-P)}$$

Where: s = required sample size.

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size.

P = the population proportion (assumed to be .50 since this would provide the maximum Sample size).

d = the degree of accuracy expressed as a proportion (.05).

Therefore,
$$S = \frac{3.841 \times 10890 \times 0.5(1-0.5)}{(0.05)^2 \times 10890 - 1 + 3.841(1-0.5)} = 371 \text{ for students}$$

$$S = \frac{3.841 \times 318 \times 0.5(1-0.5)}{(0.05)^2 \times (318-1) + 3.841 \times 0.5(1-0.5)} = 173 \text{ for teachers}$$

Thus, three hundred seventy one secondary school students and one hundred seventy three teachers are necessary to represent the whole population of the study.

Appendix - H

Sample size of students in;

$$\text{Silti secondary school} = \frac{966 \times 3.41}{100} = 33$$

$$\text{Gerbi Ber} = \frac{130 \times 3.41}{100} = 4$$

$$\text{Dalocha secondary school} = n = \frac{1000 \times 3.41}{100} = 34$$

$$\text{Hulbarag secondary school} = \frac{308 \times 3.14}{100} = 11$$

$$\text{Sankura secondary school} = \frac{471 \times 3.41}{100} = 16$$

$$\text{Lera secondary school} = \frac{1000 \times 3.41}{100} = 34$$

$$\text{Kutare secondary school} = \frac{835 \times 3.41}{100} = 28$$

Total= 160 students

Appendix I

Analysis of data obtained through observation checklist

No	Point to be observed (Item)	Yes	No	Remark
1	Every room has PTV	18	-	Most of them are old
2	CD lessons are available.	18	-	
3	The plasma TV is planted in suitable (convenient) position for all students.	14	4	
4	The number of tables and chairs is sufficient for students.	16	2	
5	Seating style of students is suitable to practice the plasma lessons.	15	3	
6	Plasma TV is functioning well.	13	5	
7	The schedule (weekly time table) fit with the PTV transmission time.	17	1	
8	DVDs are available	-	18	
9	Generators are available	6	12	Not standby and lack of kerosene
10	Dividers and remote controls are available.			
	Please add if you have any other comments on physical setting of school....			

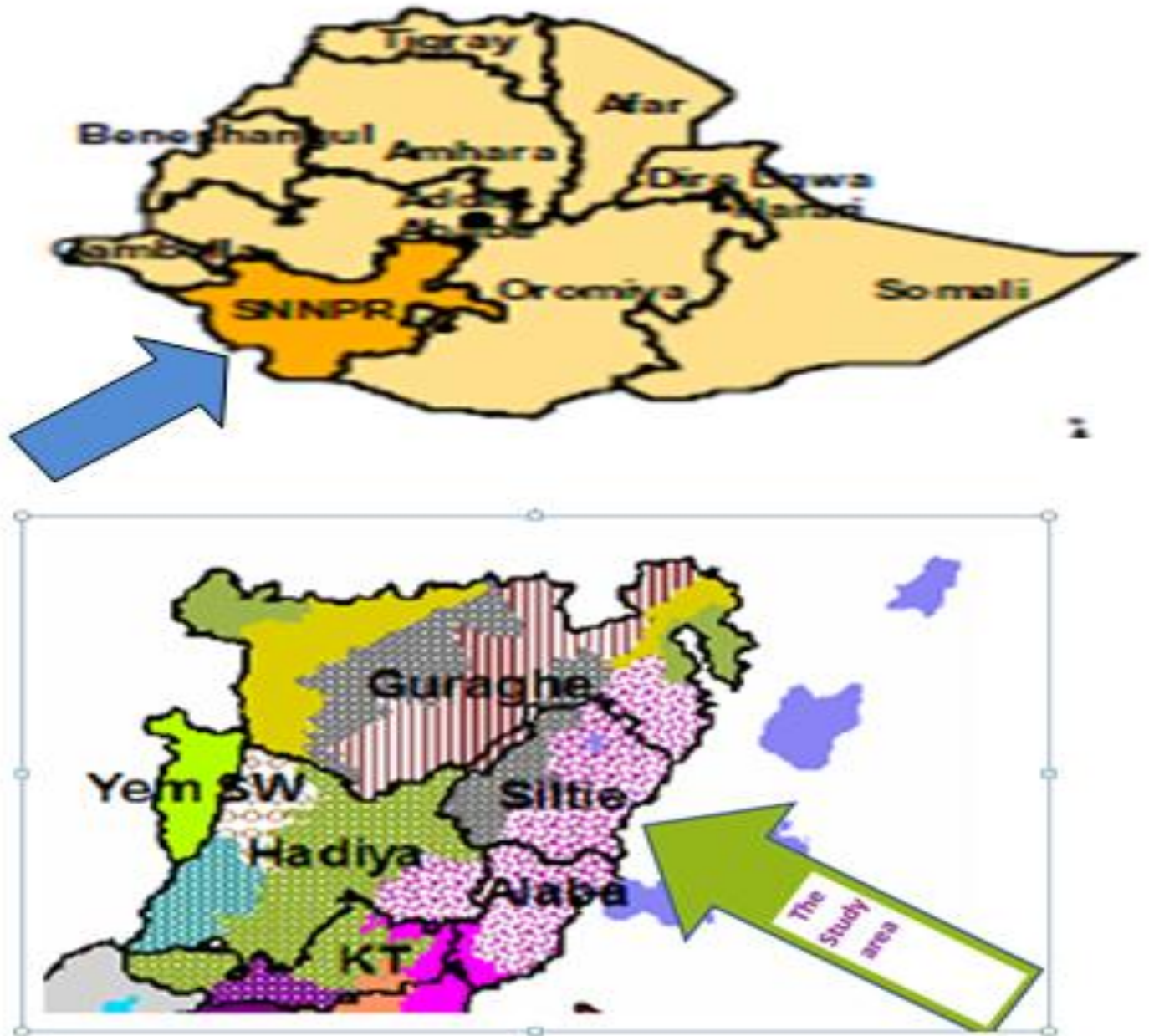
Note; numbers inside the tables indicate the frequency or number of ticks (x) given during classroom observation.

ASSESSING THE STATUS OF NEWLY REVISED PTVPI

No	Description	No of observations	Sum of scores	Mean value
1	Students brought their text books	21	30	1.44
2	Students make effort to do tasks as instructed by the plasma teacher or the classroom teacher	21	67	3.17
3	Students pay attention to the presentations (explanation) given by the plasma TV or classroom teacher	21	66	3.12
4	Students show motivation or follow the lesson energetically	21	62	2.94
5	Students do not feel sleep, laziness, bored	21	65	3.11
6	Participate in answering questions when raised by plasma or classroom teachers	21	58	2.78
7	Make effort to interact with their classmates while performing activities	21	47	2.22
8	Students consult their teachers to check the correctness of their work	21	49	2.33
Overall score				21
11	Classroom teachers teach by themselves without opening PTV	21	59	2.83
12	Classroom teachers introduce the days lesson and its objective at the beginning	21	33	1.56
13	Classroom teacher motivate (encourage) students to accomplish their task and/or to watch the program carefully	21	50	2.39
16	Classroom teachers assist students to perform their task whenever they need his help	21	55	2.61
14	Classroom teachers facilitate the classroom situations for students to do in pair or group as ordered by the PTV presenter	21	49	2.33
15	Classroom teachers follow up whether students complete their task/activity or not	21	50	2.39
17	Classroom teachers give feedback to students	21	49	2.33
19	Classroom teachers revises the days lessons by integrating it with the textbook	21	75	3.56
20	Classroom teachers encourage students to read further by giving supplementary activities beyond the activities given by the PTV teacher	21	61	2.89
Overall score				2.28

Appendix J

Bordering Zones of the Study Area



Source; SNNPR state livelihood profiles regional overview. Retrieved from

<http://www.dppc.gov.et/Livelihoods/Downloadable/Regional%2520Overview.pdf>

