FACTORS INFLUENCING THE IMPLEMENTATION OF PROBLEM SOLVING APPROACH IN THE SECOND CYCLE PRIMARY SCHOOLS OF TIGRAY

BY

DESTA ABERA

ADDIS ABEBA UNIVERSITY

SCOOL OF GRADUATE STUDIES

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Approval of the Board of Examination:

Chairman, Department

Of Graduate Committee

Advisor

Examiner External

Examiner- Internal

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Abstract

The objective of the present study is to examine the factors influencing the implementation of the problem solving approach in the upper or second cycle primary schools of southern Tigray administrative zone. Nine schools found in four weredas were selected as sample study areas using the quota and simple random sampling.

A total 306 respondents have participated as the source of data. 112 Teachers including principals, 5 Wareda educational supervisors and 9 Curriculum development experts were also taken using the available sampling techniques. 180 Students were selected randomly, 5 students from each grade level. A questionnaire was thus administered to investigate views held by teachers, supervisors, experts and students on the issue. The questionnaire dealing about school facilities, teachers level of training, attitude to the profession, the organization of curriculum materials, and the and supervisory support given to schools was administered to teachers, supervisors and students. Experts of textbook development were made to respond about the organization of curriculum materials by expressing their level of agreement on the issues.

Analysis of the results indicates that there is lack of resources and facilities in schools to be available, Low level of teacher's qualification and awareness to shoulder the responsibilities of teaching, weak curriculum material development as well as in sufficient supervisory assistance to the schools were found factors to influence the implementation of problem solving approach.

A recommendation is made to fulfill facilities, strictly following classroom standard population, up grading the professional qualification of people engaged in the teaching process, making frequent supervisory assistance to schools and organizing short term workshops, seminars as well as to encourage an inter staff training were also recommended. In preparing the textbooks efforts to exploit the necessary resources and inputs of related professional was suggested as a solution to minimize the defects of the curriculum materials.

CHAPTER ONE

1. INTRODUCTION

1.1. BACKGROUND

Practice and a number of scholarly studies support the role of education to bring about a multidimensional development in a society. G.M Coverdale (1974:7, Beseecher, Hill (1990:20, G. Bishop, 1989:26), agree on the contribution of education in solving poverty problems, realization of economic potential, and cultural development. Bersecher (1990:20), remarks about the greater profitability of investment in primary schools than investment in any other educational level, for it is the basis of all educational endeavour aimed at inculcating the young generation for better life.

Although Ethiopia has been exposed to the modern Western education for a hundred years, it is a country that has made the least use of education for its socio economic development. Education has not helped the country to achieve its proper place in the world, serving as a tool to get rid of poverty and backwardness. Understanding this problem, the then Transitional Government of Ethiopia has adopted the New Education and Training Policy (NETP) and identified the major problems of relevance, quality and equity as crucial issues of education.

In the policy document the general objective of education has been stated that education is geared towards the "development of physical and mental potential and problem solving

capacity of individuals by expanding education and in particular by providing a basic education for all (MOE, 1994:7).

Problem solving approach as a leading guide to make instruction and education, to enable learners related to the day-to-day lessons in to actual life, seems an appropriate and timely response to schools effectiveness. This is a drastic shift of attention to break the relationship of our school instruction from the traditional teacher-centered method of teaching, which is most of the time divorced from life.

The traditional teacher-centered method of teaching has been criticized for it lacks the necessary concrete experience during education and training, it lacks abilities of observation and doing which are critical and remain underdeveloped. The need for concrete methods of teaching that might involve all the senses and muscles of the student as part of the during learning experience, therefore, presumes a completely different perspective on the role of education (Amare, 2000:11)

In the traditional approach, education was conceived as a process of transmitting knowledge, facts, rules, or action (Tanner and Tanner, 1980 Feriere, 1972, Borich, 1998, Amare, 2000). The teacher is considered as the center of everything while the learner remains a passive receiver. Verbalism was predominantly used as an educational medium to which the children were often exposed in the system of education. The teacher, therefore, gave little or no attention or chance to students to enable them to discover, see problems and give solutions.

The fact is that, this (traditional) method restricts our young learners to the very simple and elementary thinking skills and does not help them to develop higher order thinking skills. Simply memorization of information without being required to do something creative or analytical with it keeps our students at a very low intellectual level. This is not adequate for any learner in the late 21st century, nor is it adequate for the challenges Ethiopia faces in promoting social and economic development and building a democratic civil society (Leu, 1999:7)

These days, however, as the result of the impact of educational research and the development of new educational technologies, new methods are advocated for better learning and it is these factors that forces Ethiopia to advocate the new problem solving approach. The multi-faceted problems of the country can be alleviated through education in the long range of time and minimized using the new approach.

The works of many scholars support the new method of problem solving as an essential element or instrument to make learners relate to life problems and enable them to give solutions. Ellen Eagne as cited in Biehlers (1993:453) stated that a problem is said to exist when one has a goal and has not yet identified a means for reaching the goal. Problem solving then is the identification and application of knowledge and skill that results in goal attainment. Bruner in Westel (1996:228) has emphasized the merits of such a method of learning in fostering mental activities. He has also further contrasted the traditional expository method of teaching with what he refers to as a hypothetical model, the method foster's pupils' willingness to ask questions and seek out provisional answers for themselves.

The essence of problem solving is that the pupil is active in discovering important principles related to problems in the classroom and the external world, and practice to give solution without undue interference of the teacher. In elaborating problem solving, perhaps as the most important method, Brown (1989:99) and Beswick (1987:73) point out that, it is an activity to find and evaluate evidence (including discarding what is dated or irrelevant or suspect) to come to a personal, independent judgment, to participate constructively in group judgment, to frame hypotheses, design tests for them, and justify conclusions from such tests to think shrewdly and reactively (lateral, imaginative, speculative thinking) and to apply knowledge and experience to a new situation. Mackie (1968:49) and Azeb (1995: 83-84), share similar ideas on the importance of the problem solving approach to educate learners in schools.

It is, therefore, believed that the problem solving approach enables the learning process to be unified around purpose and to bring about a creative self-responsible learner. It will also produce a citizen who can integrate what is learned with his dynamic personality and will become truly part of him and not something memorized for the purpose of repetition. The problem solving approach helps to weave the skills and abilities, attitudes and principles learned in to the already existing fabric of the student's knowledge and abilities.

As already mentioned in the above paragraphs, although the policy of the country adheres to the new problem solving approach for the schools of the country, there seem to be problems of implementation related to various factors. Therefore, as far as the researcher's knowledge is concerned, there are few studies undertaken on factors influencing the employment of the problem solving approach in Ethiopia, in general, and in the Tigray region in particular after the implementation of the new curriculum. It is with this l information that the researcher is

intended to carry out research undertaking, which focuses on the identification of influencing factors in employing the problem solving approach in upper- primary cycle schools of Tigray.

1.2. Statement of the Problem

A policy change and curriculum reform has been under way in the country since 1994. The New Education and Training Policy (NETP) gave a due attention to the problem solving, high mental functioning, and creative approach. It is stated as follows, "The Policy emphasizes the development of problem solving capacity and culture in the content of education, curriculum, structure and approach, focusing on the acquisition of scientific knowledge and practice "(MOE, 1994:4). The approach is meant to produce people with sound knowledge, practical skills and positive attitudes about themselves, as well as about the society and environment as a whole. Considering that the nation's future will be shaped through its programs of education and the well being of its citizens, by employing the problem solving approach is a sound decision. In the actual practice what is stated in the policy document does not seem to be practiced appropriately by engaging students in activities of these natures.

Moreover, the old method of focusing on lecture, chalkboard and textbook still prevails and the majority of teachers do not utilize the new approaches as intended. The recently prepared curriculums materials, that is, textbooks and teachers' guides, are not prepared in such a way that they facilitate the problem-solving approach. Classroom conditions and school facilities do not permit the practical application of the new approach. The absence of qualified professional assistants in the instruction process who could contribute to the implementation through giving related supervisory support and lack of instructional materials seem to hinder the progress.

The above pieces of evidences show that the new approach is prevented from being fully implemented. Therefore, this study will attempt to answer the following research questions.

- Do teachers gain the necessary knowledge and skills during their pre-and in-service training?
- Are there enough instructional facilities to implement the approach?
- Are the textbooks and teachers' guides prepared in such way to make the problem-solving approach effective?
- Do teachers have positive attitude towards the problem solving approach?
- Do teachers employ methods that help to implement problem-solving approach?
- What efforts are made by teachers and school personnel to implement the problem solving approach?
- Are there competent professional supervisors who could give support and technical assistance to teachers on the implementation of the new approach?
- Do the classroom conditions permit the implementation of the problem solving approach?

1.3. **Significance of the Study**

Learning at every level of the institutions or schools should not be only the acquisition of knowledge related to facts, ideas, principles and rules to be memorized. Rather, it should be a genuine intellectual adventure. It should be a process, which demands the ability to invent, to create, produce and to meet the ever-changing situation of society. The continuous development of imaginative anticipation of the process of learning, the ability to cope with drastic

technological changes, and answering the basic social issues are assumed possible, to be attained through employing the problem-solving approach of teaching and learning.

The study of the influencing factors in employing the problem-solving approach seems interesting, where it seeks the attention of citizens, because the approach is meant to enable schools to produce citizens who can play a decisive role in building their homeland. Therefore, the study of the influencing factors in employing the new approach will have the following significance.

- It may help planners, educational officials and policy makers to be aware of the problems of implementation and thereby to seek solutions.
- It may initiate other interested researchers to carry out more extensive studies in the areas.
- It may encourage other interested bodies to be involved in strengthening the implementation of the approach to practical conditions.

1.4. Delimitation of the Study

The study could have been of greater importance to get more comprehensive information had it had covered a larger part of the region or of all the southern zone secondary and primary schools. However, due to constraints of time and other resources the study is confined to some selected governmental second cycle primary schools of the southern Tigray administrative Zone.

1.5 Limitation of the study

The researcher strongly agrees that the inclusion of a large part of the region schools and population size in the study could help to get more relevant and broader information. However, because of time, financial and other resource materials constraints the researcher could not able to conduct the study in depth. The researcher also believes the importance of including content analysis and interviews to use as data gathering instruments for making the study more reliable and stronger in its evidences but due to time and other resource constraints the study data has been limited on questionnaires and class room observation.

1.6 Definition of terms

Implementation: refers to actual use of the problem solving approach for realizing the planned curriculum into practice

Second cycle: refers to grade levels 5-8.

Inquiry: a method that enables to solve a problem based on evidence

Project: a situation where a learner relates activities by investigation and solving problems

Problem: any situation, which requires a learner to hunt for a solution

CHAPTER TWO

2. Review of Related Literature

2. 1. Instructional Methods

Methods are means of conveying ideas and skills to impart and acquire a certain subject matter in a more concrete and comprehensive way. Methods are used to achieve desired educational objectives.

They are all tools for educating learners and require appropriate selection and application. There are a number of methods but they can be categorized in to two main areas. The traditional and modern method and. Sometimes they are known as the teacher centered and learner centered. The problem solving approach is related to the learner-centered methods. It is an approach that gives a due emphasis to the learner to be an actor in learning and searching solutions rather than to be dependent only on the teacher.

2.1.1. Classification of Instructional Methods

2.1.1.1. The Teacher centered Approach

This approach gives the priority role and responsibility to the teacher. The teacher is considered as the source and the student as a recipient. This approach includes methods like recitations and classroom lectures. Some people agree that this method, if properly handled by experienced teachers, it can to give students the necessary knowledge. However, many scholars in the field of pedagogy emphasize its disadvantages rather than its advantages. Accordingly, the following points are some of the shortcomings mentioned by scholars.

Since traditional methods have no variety, they became monotonous and boring. The learning process depends on the talking of the teacher where the learner becomes a passive listener. Moreover, it inhibits active participation and research ability of the learner and encourages him or her to be submissive (Yallew, 1999:27)

The teacher centered method gives emphasis to the teacher as a knowledgeable person of the subject matter. Although the role of the subject matter specialist cannot be underestimated, equally important factors are the students and their experiences whose role have not been recognized. Yet, the recognition of student activities in learning does not go beyond lip service by educational authorities (Elizabeth, Leu 1999)

The teacher centered method focuses on content, emphasizes knowing what students work as individuals and often-in competition with each other. Students are highly dependent on the teacher's activities and learning objectives are imposed; lecture dominates as the mode of curriculum delivery. The teacher's role is that of an expert (Ellis, 1995:219). Therefore, the role of the traditional method of teaching in the current world is decreasing in its relevant. Rather it is seen as a problem endangering to fruitful results of education. Although education is fundamental to social regeneration, yet there is a danger that it will fail to play the role to bring about changes. The traditional approach of educating is still dominant in our schools.

2.1.1.2 Student centered Approach

The purpose of education is to develop intelligence and skill to live. The old school curricula and instruction, which focuses on rote memorization, passive learning and lower order thinking, are found to be wasteful. The emerging new society is an information society .It needs flexible learners who are self directed, capable of higher order thinking, and skilled in technology of communication (Nardos, 2000:1).

The shortcoming of teacher-centered methods has led to bring about changes for the new learner centered or active learning. The new methods pave the way for the learner's active participation under the guidance of the teacher or in a personal initiative forms. This approach adheres to the strong assumptions of the learner to be active rather than to be passive. In fact learning in this approach is associated with doing. The learner is actively involved, so that there can be more connections with the past learning and between new concepts (Barniet, 1995:156)

The learner-centered method is sometimes known as the indirect method. Various studies assured that indirect methods are usually more effective than the direct teaching .it is not because indirect teaching does teach indirect style, but because it can teach both directly and indirectly (Flanders, 1914).

The learner-centered approach or indirect teaching requires developing feeling for the appropriateness or various technique and methods for various kinds of learning situations, and expertise in a large variety of methods as well as good command of the subject matter. Changes are built one upon another.

This approach focuses on process, emphasizes knowing how, students work independently in groups and teams collectively and cooperatively. Teaching sessions are flexible and are not always classroom based. Teacher is facilitator and a resource for students in a learning partnership (Ellis 1998:291-292)

2.1.1.2.1Techniques of Student Centered Approaches

A. The Problem Solving Approach

The basic purpose of education is to enable the child to adapt himself to live in a society, which is full of problems. To be successful, one must be adequately equipped, with proper reasoning and reflecting power. Not only to live in the society but also to be able see problems and puzzling situations related to the normal features of a child's everyday life in schools. Therefore, it is important to encourage the problem solving activities in schools.

The problem solving approach is known by its nature as a fundamental means of enabling the learner to search to solution for a given problem. It allows the learner to use his prior knowledge and skills to arrive at a resolution of challenging problem. As a result Callahan, (1988:240), defines it as any learning activity in which the learner has to look for or think of answers. Problem solving approach enables the learner to develop generalizations that will help him to solve the problems he/she encounters in life. It affords the learner an opportunity for previously conceived generalizations to use to new situations.

The learner must define the problem more clearly perhaps he should be able to state a hypothesis, to examine data, and generate a solution. Through this process, the learner is expected to arrive at higher level of understanding the phenomena under study (Robert, Michael et.al 1989:10)

In this approach, the teacher allows the learner to be self-learning or one who independently works towards teethe attainment of expected objectives. He plans activities, experiments, and make self-assessment, the teacher encourages students to write their own notes in their own words. But this does not imply that the teacher does not encourage students to write their notes in a formal style use well structured and teacher directed lessons, give experiment to students on worksheets, assumed all students' work against teacher mark scheme.

Problem solving activity is one that requires thought, search for solution, it also includes writing a term paper, preparing an oral report creative writing, art, arithmetic, social science, and natural science (Frandsen, 1957:147).

Learning results from reaching purposefully to problem situations and involves a change in or a reorganization of individual's perceptual, cognitive and motivational, emotional structure which may be utilized as guided to more adequate adjustment both to the original and related situation (Ibid, 486).

Problem solving is an important skill to be developed in its own right, but it can also be a powerful stimulus for creating a need to know. According to Barnett, problem solving has the

advantage in motivating the learner towards better mental development and mentions it as follows

> *"The natural curiosity and competitiveness of human beings can be aroused through the challenge of a problem. A carefully selected problem, which will require students to build on what they already know, but which will involve them in finding out more and it is a powerful stimulus to learning (Barnet, 1995:606)."*

This approach enables pupil to learn from each other rather than only from their teacher. In applying this approach it is important to know the following important things.

- A motivated person, who, upon meeting a situation to which he cannot adjust adequately on the basis of their innate behavior pattern or prior learning.
- Make multiple, goal directed, provisional trial
- Experiencing the effects of these trials, both perceptually and as motive satisfaction or dissatisfaction.
- Selects (differentiated or integrated) often from several trails, a pattern of behavior with promises to meet more adequately the motivating conditions.
- When the same or a similar situation arises again, the more adequate pattern will recur more directly and with less attention offers (Callhan1998: 240), (Frandsen 1957:286-287).

Teaching offered using these scientific procedures helps the individual learning by problem solving to develop concepts, verbalizations and motor skills and creates the ground for self-learning.

By giving the student increasing responsibility for his or her own learning within a framework of support, teachers will find that, as well as learning the direct school subjects. Students will also develop a range of personal, social, information handling and learning to develop skills, which considerably enhance personal effectiveness and help contribute to equalize and optimize opportunities for them (Julian, 1995:39).

More elaborated and comprehensive idea given by Flaming was cited in Azebs as follows

> *"Problem solving is a whole way of behaving, a way of attacking situation, of mobilizing pertinent thinking process and arriving at a solution .Problem solving is essentially a " search for solution" to situations that have novel elements in them. Past experiences often help one to sense and define the problems, explore some possible ways to resolve it and anticipate some of the consequenees of proposed solution but it is the new element in the situation which mark it ...It involves the willingness to explore, to make guesses, to try out an idea, to make mistakes, to back up from a mistake, and start at over again, problem solving is then both an attitude and set of procedures and skill. These can be realized in a classroom climate that encourages the search, respects creative, and often odd-ball thinking, and makes it "safe" to explore, to make mistakes, to try ideas on for size. (Azeb, 1995:83-84)*

The attainment of such interrelated and comprehensive aspects of knowledge, skill and attitudinal development of the human learning are of great importance in creating competent and versatile citizens. Therefore, such importance makes the new approach to be the demands of the day in the new educational system of countries of the developing world.

B. Inquiry

Inquiry is a process of solving problems based on evidences. The inquiry process, while seemingly remote and academic, is very much a part of our everyday lives. Simple activities, such as deciding which of two items is a better buy or better meets our needs involves inquiry.

Most of the findings related to health and quality of life are based on the process of inquiry. (Eggen. 1996: 271).

It is a method of teaching where according to Fenny (1987:314). it is the active process of seeking understanding. It produces the new ideas, which contribute to building human civilization. Every person has the potential to create new ideas and the process of inquiry is both an individual and interpersonal adventure. Children are naturally curious and eagerly seek to understand the world around them. This is the essence of inquiry. The teachers task is to create the situations in which each child can discover the power of ideas and generate concepts about the world.

A teacher conducting an inquiry lesson has as a primary goal the development of students' abilities to recognize problems, suggest tentative answers, identify and gather relevant facts, and critically assess tentative solutions. These are the skills obtained from inquiry method. The development of these skills is an explicit process of goal when inquiry models are used (Eggen 1996:241). As students are the primary investigators in an inquiry lesson, the teacher must carefully plan appropriate activities to certain situation in order to facilitate the process. To conduct an inquiry lesson, students need a problem or question to examine and must have access to data that allow investigation of the problem. Both of these require planning (Ibid; 241). The inquiry model requires a classroom environment were the students feel free to take personal risks and feel free to offer their conclusions, conjecture, and evidence without fear of criticism or embarrassment.

The major aim of inquiry teaching is to stimulate or promote independent resourceful thinking. Involving students in inquiry method is one of the most effective ways to help them to develop their higher order critical -thinking skills (Clark, Starr, 1986:250). For the young child inquiry involves learning through exploration and investigation. The inquiring child uses sight, sound, smell, touch, and the kinesthetic sense to gain general and specific information that will help form concepts, categories is for making sense of experiences.

-Inquiry process used by children

In teaching students using the inquiry process the teacher is expected to know why the inquiry method is using .the procedural steps of proceeding the activity from simple to complex is essential in teaching children. The following important points are to be followed in teaching the inquiry process.

1. Exploring-using the sense to observe, investigate and manipulate
2. Identifying, naming and describing what is experienced
3. Classifying grouping objects or experiences based on their common characteristics
4. Comparing, contrasting and observing similarities between objects and experiences
5. Hypothesizing using the data obtained from experience to make guesses (hypotheses) about what might happen.
6. Generalizing-applying previous experience to new situation (Feeny 1987:315), (Eggen kauchaka 1996: 239)

When teachers use an inquiry model, they guide students through these five steps as the students work to ward a solution to the problem. Most inquiry method, both in school and in real life is carried out by some variety of problem solving strategies.

The problem at hand may be exceedingly complex, requiring great skill and effort for its solution, or it may be so simple that solving it is almost automatic, but in any case, the problem solving capacity is one that requires thought and a search for a solution.

The inquiry method helps the learner to know how data are collected in a more correct, accurate and scientific way of acquiring knowledge. There are different ways of using the inquiry teaching and the following are some of the types of inquiry.

Guided inquiry

If students are lacking experience in learning through inquiry, thus initial problems should be structured and planned with all its procedures by the teacher. As the inquiry level of students increases the teacher will reduce his or her guidance and let the students formulate their own questions. The guidance of the teacher should depend upon the level of student's ability.

Free Inquiry

In this type of inquiry students can formulate their own problems to be solved, devise methods and techniques to solve the problem, carry out an investigation and arrive at a conclusion. This type of inquiry is usually favored for brighter students with the minimum guidance of the teacher.

Modified Free Inquiry

It is half way between the two types. The teacher provides the problem and the students are expected to attack the problem on their own. Teachers give the necessary resources and assistance. The teacher's effort has its own impact on the success or failure of this method. Inquiry methods require better maturation of the learner.

Advantages of Inquiry

a. It tends to generate enthusiasm and interest in the students

b. Since the students find out things by themselves they remember them better.

c. Some researchers maintain that the approach enhances critical thinking and states of investigation (Brown 1989:90)

C. Discovery Methods

The notion that pupils learning are more meaningful, more through and therefore are more usable when pupils seek out and discover knowledge rather than educational theorists have held just being receivers of knowledge for centuries (Callahan, 1988: 237).

The problem solving approach is similar to the discovery method; a term used in the teaching of mathematics also referred to as the meaningful approach, the development or the sequential approach. (Smith W, Edward, 1961:624).

Many practitioners today are convinced that these theories are free and they use discovery teaching as the heart of their teaching approach (Callahan, 1998:237-238). If teachers will give pupils opportunities to draw conclusions from data that are provided or that they seek out for themselves, the pupils will benefit. Pupils can also learn from being shown, told, or conditioned (Ibid 238).

The essential element in discovery learning is pupils drawing conclusions and generalizations, or applying them to new situations. Most discovery teaching method must be a combination of

deductive and inductive. Generalization can be arrived at from specific task to generalization or from general to specific task. For discovery learning the following steps, need to be considered:

a. Select the generalization

b. Seta situation to solve problems.

c. Set up experience that will bring out the essential elements such as problem solving questions, demonstration and so on

d. Set up experience that will bring out contrasting elements

e. Draw generalization or concepts. (Callahan, 1998: 238)

Burner stressed the importance of teaching by the " discovery" method of presenting topics in a way, which allows the pupil to discover himself important principles. He considers that this approach would stimulate" intuitive" thinking, which had been long ignored in schools. Moreover, discovery methods play a vital role in facilitating, in organizing the curriculum to fit to the pupil's level of intellectual development. (Noel, 1996: 228).

The teacher's role is to guidance rather than to be a dictator. As a guide to students' learning, teachers try to raise problem issues and questions that will pique the students' interest and call further investigation, encourage the students to pursue these matters and guide them in their investigations, helping them to clarify the issues, the facts and their own thinking as well as to draw reasonable conclusions. Then teachers carry the students a step further by inducting, test their conclusion and generalizations, and apply them to other situations (Clark, Starr, 1986:250).

D The Project Method

The project method is one of the most valued modern methods of teaching and learning actively. Beswick (1987) noted that, this method is a situation where the school, the curriculum, and the contents of the studies are considered from the child's point of view, his or her needs and interest in the context of real life situations. In this method there are attempts to connect activities in the school to the child's daily life and needs.

The project method is a revolt against the traditional environment of school which is usually marked by listlessness and passivity and which lacks active involvement of students. At its best, a high level of students' activity, enthusiasm, interest and commitment characterizes the project approach. (Ibid.233).

The project as a method is a natural, lifelong learning activity involving investigation and solving of problems by an individual or small group. Ideally it should consist of a task in which a student sets out to attain some definite goals of real personal value (Clark, Stars, 1986:256). The project method as a method of teaching and learning requires planning and should help students to arrive at a conclusion. Learners can select their own individual projects independently or in-group.

The teacher can play a significant role in presenting a list of alternative or selected projects for students. He or she also should be in a position to approve the project of his students before they attempt to work. It is not enough to select a project; it is also essential to predict the product. Learners should get insight to evaluate their work progress and related results.

One of the most important factors in developing the learner's acceptance of different values is continuing experience in planning and executing projects immediate, current, and personal value to him. He thus learns through direct experience, the necessity of looking ahead for consequences of taking actual reality in to account, and of searching the experience of the persons for guidance. He learns to be cautious, to defer decisions until he has prepared sufficiently and then to translate them in to action.

E. Case Study

The case study method is a special type of problem solving method. It consists of researching, detailed study of a particular situation, institution, decision issues from which pupil draw generalizations concerning the type. The case study can give the pupils considerable under standing of difficult, complex methods. (Noel, 1993:248).

- Select and define the topic or problem to investigate, identify, collect and make ready materials needed for the study to do the works.
- Share the findings for classmates
- Draw generalization or concepts
- Apply the generalization or concept. (Ibid. 248-249)

Socratic and guided discussion research and other case studies and the various types of action learning and community involvement activities (Ibid.238)

The teacher's role in this method should be supportive, accepting, accentual, and positive for the students. He or she encourage the exchange of ideas, accept legitimate hypothesis, faster free debate and open discussion. (Noel, 1993-235) in addition, to stimulate, independent, resource

full thinking you should also, cheek, the data gathering, are through questions, ask for interpretation, explanation hypotheses. Ask pupil what the data interpretation implies and confront pupils with problem contradiction.

2.2. Factors Influencing The Effective Implementation of The Problem Solving Approach

A number of factors can be mentioned as related to facilitate or hinder the implementation of a given curriculum, methods of teaching or any other educational activities. Factors related to the teachers attitude, skill, experiences, and professional competencies organization of curriculum materials, the availability of appropriate instructional materials, school facilities, class size, and the supervisory assistance, can be cited as some of the main factors that can influence the problem solving approach .In the following pages an attempt has been made to mention ideas related to these factors as written by many scholars in the field.

2.2.1. Human Related Factors

2.2.1.1. The Training of Teachers

The success of educational process depends to a great extent on the character and ability of teachers. Teaching in the modern school must be vastly enable to produce better-educated person than was found formerly. Teaching demands the ability to adapt boldly, to invent, to create procedures to meet the ever changing demands of learning situation in order to enable to develop the continuous imaginative anticipation of mental process of the learner. Teachers must know much more about subject matter, methods of teaching the learner and his growth, the setting for and environment of learning, about the interaction between learner and environment.

Therefore, the modern professional teacher must posses a system of principles and habits of thinking which guide the operational process.

Scholars have suggested that, if education is to be successful, next to curriculum, teacher training is of special significance, which needs consideration so as to maximize the development and changes in education (Gerhard 1982:21)

Lock, heed (1991:45), Andrew Pollard and Jill Burne, (1994:80), Cooper (1986:4-5) suggests similar views about the need to have teachers' competencies resulted from training. They mentioned about the general areas of the teacher's competence related commands of theoretical knowledge, about learning, and human behavior, mastery that requires practical application in concrete situation, curriculum arrangement, knowledge of general and specific methods of teaching etc. Because theoretical knowledge can be used to interpret situation and solve problems, many class room events that might or remain inexplicable other wise can be recognized and go unnoticed reserves by applying theories and concepts of human behavior. They stress that quality of teaching has direct relation with the teacher's extensive training and repeated exercises.

Teacher's pedagogical skills can be improved by emphasizing courses that develop the teacher's ability to reason about the content of instruction. As already has been discussed teachers should have a sound knowledge of the curriculum and be able to transfer it to the students. They must be able to analyze critically the material to the interest and abilities of their students. Teachers must be able to organize and manage the classroom evaluate discipline, and encourage students in manner that promotes better learning.

Teachers are central to the delivery as well as the quality of education. The academic and professional training of teachers has direct and positive bearing on the quality of their performance and consequently on the achievement of students (Lockheed 1991:62-63, and Gerhard 1982:23). Effective teaching is determined by the individual teachers knowledge of the subject matter and mastery of pedagogical skills (Ibid.). The above scholarly ideas support the need for a sound training of the teacher in order to change the curriculum to real situations in the classroom teaching.

Due to their lack of professional preparation, they frequently demanded curriculum packages that are worked out right down to individual sequences of instruction, for this facilitates the preparation of their own lessons. They are forced to be dependent upon others. They do not try to fill the gap between reality and ideas in the curriculum. (Ibid.25).

The teaching force in many developing countries is neither motivated nor trained. Most prospective teachers lack adequate general academic preparation, both new and experienced teachers lack many pedagogical skills and innovation and their professional commitment to teaching is low.

Because the teacher is considered as a central importance in an institutionalized educational system, the curriculum is presented with many new tasks. Moreover, in principle, elementary education is seen as the basis or for life long learning, it becomes necessity to have well qualified teachers who can make the real interpretation of a given policy or subject matter.

Therefore, for a teacher wishing to do a good job in his profession it is essential to have a sound grasp of the basis of the subjects he teaches. As well as this, he should be acquainted with the research techniques and tools of his discipline. This together with continual up dating of his knowledge is necessary in order to train the young generation in a world in which basic scientific technical knowledge and skill alone makes it possible for them to participate consciously in the economic and social process.

As tried to mention in the a above paragraphs it is important to note that, teachers should be knowledgeable, competent and enthusiastic in their subject, classroom management, and under standing and sympathetic to students needs. It is important, but not sufficient, to be an expert in the subject. It is also crucial to have the ability to select and apply the most important methods or approach of teaching.

Teachers should be keeping up date with their subjects and should be able to enrich their knowledge and skills of teaching. For securing the best kind of learning and teaching the teacher should have: mastery of the subject matter, skill of selecting and employing appropriate methods of teaching, appropriate techniques of evaluation as well as instructional materials.

Teaching requires the preparation of professional teachers. The teacher should be capable of taking responsibilities on building his/her homeland and inculcating the young generation for better life. To enable them contribute some thing valid to the socio-cultural and economic development of their society. In addition, they are expected to have the proper profile for each level or grade level they are assigned to teach.

The policy document on teachers education and training curriculum of Ethiopia has noted the following profiles for teachers who are engaged in teaching the upper primary cycle (5-8)

After completing grade 12, these teachers get a 2-year pre-service training program and obtain a diploma (12+2).

Teachers teaching in this cycle of the primary level are:

- Able to impart general education in linear approach
- Specialized in two or three subjects, and the appropriate learning methodology.
- Equipped with professional capabilities, according to their subjects of specialization.
- Able to analyze and make use of special potentialities of the age level of student of this cycle and to prepare them for the next level of education and for elementary practical a activities
- Capable of self-evaluation and evaluation of the learner to enhance the teaching-learning process.
- Committed to maintaining a high level of professional ethics (MOE, 1994:54)

As it is noted earlier, the training in the pre- and in - service programs is aimed at enabling the teachers to have the required qualities.

2.2.1.2. Teachers Attitudes

Teacher's attitude is the basic ground to act in a positive or negative way to wards persons, ideas or events happening in the environment. And most educators are convinced that teacher attitudes are very important dimensions in the teaching process.

A successful innovation depends substantially on teacher's attitude to wards proposed curriculum alterations. Students with teachers of positive attitude to wards teaching and the curriculum are found to be high-level achievers in learning (keynes, 1986:39). (Cooper, 1986:5, Calhan, 1988:2), consider the teachers attitude as very important aspects in the teaching process and suggested that teachers attitude to wards the subject taught is one of the commonly studied teacher characteristics. Noel (1993:117), asserted that trust is the important ingredient, which the facilitator provides. The more effective teacher were rated higher on every attitude measured by an inventory, They were seen as more real, as having higher level of regard for their students, showed more empathic under standing.

No matter how good written curriculum is and the extent of back up resource supplied, no matter how much incentive/ through stick or carrot/ is applied through the accountability of a national assessment scheme, no matter how much politicians exhort, un less teachers are with a good enthusiasm for the subject and methods with their students, teaching will never became better than adequate (Wool, 1994:43).

Many prominent writers focuses on the importance of teachers attitude to the real achievement of educational results. Selection and training provides qualified personnel to do each job. But to get the job done the individual must also want work. What individuals actually accomplish may vary widely as function of their attitudes to wards the work, to wards the immediate superior or to wards their fellow workers, and to wards other aspects of the job. Low moral can make a brilliant person to well-high incredible feats (Annastisic, 1979, walberg, 1986, Jackson, 1986) as cited in Calhan(1988).

Educationists have common agreements as the correspondence between attitude and teachers performance in the classroom. According to (Cooper 1986:6), teacher's attitudes are very important and have the direct effect on our behavior, they determine how we view our selves and interact with the environment.

Therefore, possession of a college degree not in any way ensure that teachers will be effective in their teaching unless and other wise they have positive attitudes to the subjects and approaches of teaching. Negative attitude may harm or injure the whole process of teaching, such as during selection of content, methods, planning activities resources, mechanisms of evaluations and so on. A teacher with a positive attitude and the necessary theoretical and technical know how is the one who can demonstrate the ability to bring about the intended learning outcomes.

2.2.1.3. The Role of Supervision in Facilitating the Problem Solving Approach

Supervision is the service provided for the purpose of improving teaching and learning. The effectiveness of supervision depends on the skills and competence of supervisors in working with the entire staff, classroom teachers, specialists and administrators. Supervision is a cooperative service designed to aid teachers rather than to report about them (Smith, 1961:403).

Studies support the role of supervision carried by the school senior teachers, directors, and related educational supervisors who are mainly responsible to make follow-ups on how the

teaching and learning processes takes place in schools. In addition, this activity demands the presence of competent, professional supervisors who can think ahead of time about the curriculum, methods of teaching and the school situation at all. The absence of trained and skilled supervisors retards school activities from positive progress. Because schools and teachers may lack the necessary timely feedbacks related to their performance that can facilitate the teaching and learning process. Teachers who are weak in their knowledge and skill of teaching may not get with the necessary training to enable them to do better works. It is important to understand that; supervision is a type of educational service rendered by a variety of school officials, Superintendents, principals, directories, head of departments and general and special supervisors (Monere 1956:1371).

The scope of goal-centered supervision is indicated by current category of the factors conditioning the growth and achievements of pupils.

a. Factors resident in the pupils themselves internal capacities and past achievement
b. Factors resident in the teacher-personal qualities knowledge of subject matter, skill in teaching etc.
c. The curriculum its social utility, interest, value, difficulty value etc.,
d. The material of instruction, textbooks, supports and equipment etc.

Good supervisions as now conceived are governed by principles such as following.

1. Good supervision is based upon practice growing out of judicial blending of science, philosophy and ordinary experience.
2. Good supervision is democratic

3. Good supervision is creative and not prescriptive both in discovery and validation of educational facts and relationship in applying to the specific situations
4. Good supervision proceeds by means of an orderly, cooperatively planned and executed series of activities
5. Good supervision is known by the results it secures, and
6. Good supervision is guided by professional goals and standards (Ibid. 1372)

A supervisor should have the knowledge of the group establishments of which he or she is responsible including knowledge of their philosophy, their development programs and planning, management including finance and, staff development resources, organization, curriculum national appropriate teaching approaches (Dean, 1992:19-20)

The supervisor's work can also be examined in terms of the types of skills required. Four basic types of skills have been identified.

1. Technical skills refer to knowledge about such things as machines, process, and methods of production.
2. Human rational skills-refers to knowledge about human behavior and to the ability to work well with people
3. Administration skill refers to knowledge about the organization and how it works, the planning, organizing and controlling functions of supervision.
4. Decision making and problem solving skills refers to ability to analyze information and objectively reach decision (Rue, Byars, 1990:8)

Studies made on the quality of supervisor's indicates that, it is recommended in most organizations supervisors need a higher level of technical skills in addition to the other mentioned qualities.

A. Teachers and Directors as Supervisors

The implementation of any curriculum demands the cooperative effort of the entire staff. The role of senior staff members and directors are an essential element of supervisory activity, because they can give advice to staff about policies, and/ or about role of responsibility. The schoolteacher and the principal are the most available supervisors for the entire school professional interstaff development in supporting teachers who are untrained trying new teaching methods, leading staff discussions etc.

Max as cited in (Dean Jean 1992:29) suggests four areas in which he saw him self offering support to teachers:

1. Support at a basic level in providing practical ideas
2. Teaching support given in the classroom, through demonstration, general teaching along side the classroom teachers, team teaching and assisting in debate or dramatization of science or moral issues
3. Personal support for teachers, increase their confidence, being personal ambassador for their subjects.
4. Helping teachers to change the way thought sciences

According to Caruse (1986) Supervisory practitioners with responsibility range from executive directors in central administration offices of large agencies to those whose main responsibility is to teach children but who also supervise other teachers, aids, and volunteers. Some of the most common position involving supervision are executive directors, program directors, educational coordinators, head teachers, teachers, college supervision or, and consultant, how ever these jobs have many titles. Individual in them often have more than one role to perform, Rarely is supervision the sole component of their work. Positions that carry multiple roles and responsibilities etc.

For Adams and Dickey as cited in the works of Hairis, W.Chester Labmarier (1960:1442) supervision is a planned program for the improvement of instruction.

The basic goal of supervisory support is improvement of teacher's performance. The improvement of instruction requires that teachers learn specific intellectual and behavioral skills. The primary function of the supervisors is to teach these skills to the teacher. Skills of instruction process; skills of analysis of instructional process based on explicit observational process, skills of curriculum innovation, implementation, experimentation and skills of teaching performance. (J, Crag, Helen et al 1998:72)

Supervision in education has to play major role in the staff development of the institutions at every level .The following important roles would be expected from supervision as related to the staff development of an educational organizations or schools.

To improve teachers' class room instruction to provide teacher's with objective feed back on the current state of *their instruction., to diagnose and solve instructional problems to develop skill in using instructional strategies to evaluate teachers for promotion, tenure, or other decisions To develop a positive attitude about continuous professional development. (Ibid. 1998: 72-73).*

2.2.2. Non Human Influencing Factors

2.2.2.1. Classroom Conditions

Class size

Class size refers to the number of pupils regularly scheduled to meet in the administrative and instructional unit, known as class or section, usually under the direct guidance of a single teacher. (Monre, 1956:212). Class size concerns educators for various reasons because learning can only occur positively when lessons are under appropriate conditions both for the student and teachers. The classroom size has its own impact in facilitating or hindering activities of teaching and learning.

The central problems of class size relates to the effects upon administrative efficiency, pupils achievement, teacher health and moral in addition to this as Monre,r further noted that, there are significant correlation's between class size and student achievement (Ibid. 213)

There are arguments, which support the idea, that class size by it self has nothing to affect teaching and learning if the teacher selects appropriate methods of teaching . But on the other side there are scholars who strongly favor the need for appropriate number of students in a class .The idea of class size is becoming a concern and an essential point of discussion among

scholars because it is assumed as the class size increase, students face any or all of the following problems. As Gibbs cited in Barneit (1995:162),

1. Lack of clarity of purpose
2. Lack of knowledge about progress
3. Lack of advice on improvement
4. Inability to support wide reading
5. Inability to support independent study
6. Lack of opportunity to discussion
7. Inability to cope with variety of studies
8. Inability to motivate students. Another author known as smith (1961:59) has also mentioned the following disadvantages that come as the result of large class.

1.Individualization of instruction is limited

2. Instruction tend to be the lecture, with out group participation

3. Oral communication with in the classroom from pupil to people- to teachers are minimized.

4.Written work is assigned less frequently and when assigned, receives less teacher attention

5. Pupils are less well known to teachers as individuals

A universal complaint, even among teachers with unusual success in large section, was in ability in such classes to find adequate time to treat individual differences in pupils (Monere, 1956:214). Studies made in the United States of America as in the policy of 1960's indicated 35 students is the maximum limit for effective primary school classes. Harries (1960:1497) also mentioned that the class size in elementary schoolteacher taught 30 to 34 students each in 27 %

of the states, while in the other 18 % states fewer than 25 students, 11% of them 40 or more students to be taught. The average was 31 students in one class.

Smith (1961:57) supports the idea of having limited class size. He asserted that classroom that contains exceeding 25 pupils is be coming large, and when the class size is increased to 30 or more, most educators believe that instruction suffers. The student ratio in classroom was unusually favorable, with much smaller group size. This in it self had a facilitative effect upon activities in lessons and experimentation's, since it can be assumed that; student learning is likely to be easier with a group of 42 than with a class of 25.At the same time, it tended to encourage closer and more personnel staff, student relation ship (Nobuck, 1998: 118).

According to the above scholarly ideas there is a strong belief to have smaller group of students in the classroom for better learning. An excessive number of student's means that a diminishing amount of time is available to under take necessary guidance responsibilities for these children.

For efficient use of time and labor, and for reaping the maximum benefit from the minimum quantity of input, it is essential that any action in the process of teaching and learning in schools would delineate consciously. The objective of the intended action should be viewed with comparable degree of school situations and resources. So that, attainments would be possible.

Most pedagogues agree about the population in the classroom to be a manageable size 20-35 students (Marry print, 1993:253, Andrew Pollard, 1994:154). Further more, studies made in

various countries like Sweden the class room population was 24, Japan 30, china 40 -50 were mentioned in the works of (Nobuk, 1998:168).

The Ethiopian primary school standard allows 50 students in one class while in the high schools allow 60 students. This is stated in the Ministry of Education school standard documents as the maximum limit, with the understanding of that, class rooms to be conductive, manageable and create interactive situations for the process of teaching and learning (MOE. 1988:20).

The large number of students requires more resource materials to use for practical activities, and makes difficult for the teacher to select and apply which method for whom? Because as the number of students in a classroom increases the complexity of the students personality is also demanding serious attention.

Classroom Facilities

The school child learning environment includes his classrooms and school, his home and his community and each should make a significant and unique contribution to the teaching and learning process. The classroom is the most important place for learning. It is a special environment it needs to be more than a log with a teacher at one end and the pupil at other. Emphasizing the importance of equipping the classroom for facilitating learning. Frandsen (1957:152) pointed that it should be equipped for a large variety of practices and activities. The typical intermediate classroom, for example, needs shelves containing a variety of books in children's literature, science, social studies, and nature, etc. It needs a minimum, shelves, desks, and table for special activities. Ample bulletin boards space and news print, charts for pupil presentations are useful, there should be maps, globes, variety of out materials, easels, used

magazines and equipment for mounting and filling. clipped picture. craft tools and work bench. Which drawing graph charts serve many purposes etc?

Classroom walls should not define the limit of learning environment. Facilities should encourage communication and there should be variations in lighting. Less in small group discussion space than in independent rooms. (Minal 1996:227).

There are numerous ways to think about classroom. One way is to think about them as ecological system in which a set of inhabitant's teachers and students interact with in a specific environment (the classroom) for the purpose of completing value activities and task (Arendes, 1997:17). A rich learning environment promotes independent and self regulated learning. Stimulating bulletin boards, displays, and serves as motivates for independent inquiry. The physical environment should also communicate clearly to students the importance of teacher attach to self-regulated learning. Effective teachers accomplish to this end by displaying the results of the students work and by encouraging students to displaying their own work when they think they have done good job (Arendes, 1997:268)

Building, grounds, supplies, and equipment should correspond to both the educational purpose and the means by which teachers and students achieve. Making schools more child -centered would require the use of large rooms (J. Crag, Helen et al 1998:49).

2.2.2.2. Curriculum Materials

Organization of Student Text Books

Textbooks are teaching materials carefully designed and prepared by experts for the purpose of attaining intended objectives of education. They are of a great value and they serve as a means but are not ends by themselves. Textbooks are critical ingredients in learning, and the intended curriculum cannot be implemented with out them.

The textbook is only one of the many medias through which teacher and pupil communicate with each other in an effort to carry forward the learning process.Textbook, graded, is a textbook prepared especially for use in a specific grade.

According to Shores (1960) a true textbook is one especially prepared for the use of pupil and teacher in a class, presenting a course of study in a single subject. Good (1973) explained a textbook is dealing with a definite subject of study; systematically arranged, intended for use at specific level of instruction and used as a principal source of study materials for a given course.

Textbooks can make an excellent base for building interesting, higher order learning activities (discussion, inquiry, research) that call for critical thinking and other higher mental process (Callahn, 1988: 447). As Altbach cited in Lockheed (1991:48), he considers textbooks as the single most important instructional materials to deliver the curriculum. He further noted " Nothing has ever replaced the printed words as the key element in the educational process. They are also taken as central to schooling of all levels.

Textbooks must have the appropriate content and reading level; be consistent in approach or method, and exposition; be properly sequenced; motivate the students; and finally, be readily taught by less-qualified teachers yet allow good teachers to expand upon them (Newman 1980). Throughout the world few individuals possess the expertise required for writing good text. Committees of experts therefore write book and most textbooks. Improving the content of textbooks holds great promise for improving the learning children in developing countries. (Lockheed, 1991:47).

The textbook availability for learners and teachers helps that instructional time is not wasted while teachers and students copying on and of the black board. Besides, there are many effective ways in which the student may use his book: the teacher should realize that the value of the text book in any given case depends upon the use for learning purpose of the books peculiar advantage. The advantage of text book were grouped as:

a. The opportunity to learn at ones own rate

b. The chance to repeat or review

c. The possibility for checking for re call.

d. The ease with which notes may be made for late use...(Harries 1960,Risk, 1958, Browen, oke and Browen, 1989). Another author also mentions the following ideas if books are to be help full to promote active learning for critical thinking.

1. Textbooks should contain plenty of exercises
2. They should contain sample data to work
3. Should be flexible to learners to allow the chance to work at their own speed and their own ways.
4. Should allow variable outcomes in terms of solutions to problem tasks

. (Write, 1991: 77), (Callahan, 1998:447)

As it is already mentioned in the above lines the textbook has an important role in facilitating learning. But there are also numerous problems that have been identified by scholars. The following were indicated in the works of Minal

> *" Text books attempt to cover more topics than can be treated in depth, explanations are unclear, and reader are not provided with context to make facts meaning full. Texts do not often assist Understanding why certain ideas are superior to Others for a given aims: but instead present ideas As prescriptions. Neither do most texts give an opportunity to use concepts from many fields of study in examining the same problems. How ever, under the guidance of a good teacher textbooks be came resource for developing critical studies rather than recipe for instruction. (Minal, 1996:175)*

In further strengthening the above ideas similar suggestions were given by different scholars The flowing important points can also taken in to account. *Their construction is often rigid to allow them to fit in easily in to days enlightened classroom situations; they are some times dull, they discourage the reading and studying of more profitable materials, they are often superficial and above all they do not allow for difference in students talent interests and goals. (Callahan, 1988:447).*

For this purpose, on how the curriculum material should be organized, it was said that " the heart of the technological revolution in curriculum, however, the belief that curriculum materials themselves, when used by those learners for whom the materials are developed, should produce, specified learner competence (John D.Minal 1996:66)

These ideas address that; the preparation of textbook requires serious attention. It should be designed and developed in the appropriate way to make contents of a subject matter

transferable to the learner. Sometimes there is a chance to correct minor errors found in the context, if there are good teachers there might be a probability to fill the gap. However in the absence of well qualified and experienced teachers if the text development is poorly organized, there is a danger of misinterpreting concepts depending on ones own experience and this may create a miss match between the intended objectives of education and the realities of the school work.

Therefore, textbooks if are not prepared the right way they can not serve the aim and they become far form being the ideal tool for the learning process. Lockheed (1991:46) asserted that the content of textbooks in many countries also fail to reinforce the development of higher order of thinking skills that is problem solving. In a nutshell according to the above scholarly ideas it is not only enough to have the textbooks for the teacher and the students. But, it is also important to think about the textbooks organizations. They should be also well prepared in order to enhance the interest of the students and developing the mental capacity of the learner.

Organization of Teacher's Guides

This material is mainly prepared for teachers to assist them in their work and usually arranged for use with a specific text. In short, teachers' guide is a guide addressed specifically to teachers describing the system and giving suggestions on how to use it (Yalden 1987). It has to help the teacher in providing alternative method of teaching, mechanisms of evaluating the performance of the students, indicating necessary supporting instructional materials to enhance teaching. According to Lockheed the teachers guide is expected to include the following important elements.

> *Teacher's guides are well integrated with the textbook or other instructional materials can have a positive impact on student achievement. Particularly effective are guides that includes information on what to teach and how to teach it, diagnostic tests that help teachers monitor student learning and modify the daily lessons accordingly, suggestions on how to manage the classroom, and activities for classroom use (Lockheed, 1991:50).*

Therefore, as has been indicated earlier this material is of great importance for the teachers to realize their activities .It is also essential to prepare the teachers guide as it helps to make lessons applicable to be practical during the process of teaching and learning.

2.2.2.3Availability and Utility of Instructional Materials

The Concept and Availability of Instructional Materials

Instructional materials may be defined as any medium of communication used by the teacher or pupil to advance learning (Shores, 1960, Anderson, 1956). They are the instruments with which a teacher teaches and from which students learns (Amare 2000). Ideas under lying these definitions indicate that, all teaching tools are considered as instructional materials.

Because of the development of modern science and technology, teachers no longer have to rely solely on words to make their instruction clear. There are a great variety of materials available around that can be used to make our instruction more vivid and more interesting.

These materials are meant to enable learners to use more than one sense organs. Instructional materials enable to minimize the traditional teacher- centered method of teaching, which is

dominated by the talk-and-chalk. Availability of instructional materials in schools has the contribution in facilitating learning. The instructional materials are very use full to:

- Facilitate Active learning
- Relate theory with practice
- Encourage creative thinking
- Effect students skill development
- Concretize abstract experiences
- Relate theory with practice
- Create the access to invisible realities.
- Make learning more functional by increasing efficiency (Amare, 2000:2)

(Tanner and Tanner 1980,Brown, Oke, Brown 1989) also, agree with similar point of view, on the contributions of instructional materials to enhance students learning. That the materials encourage active participation of learners, help to provide direct and first hand experiences with realties of social and physical environment etc.

Scholarly studies support the importance of instructional materials availability and utility for effective teaching. Teaching with out instructional materials boils down to using the lecture method/ teaching with out technology (Amare 2000: 41). This idea addresses the need to allow exploiting their environment, seeing concrete situations and encouraged them to be self-learning. But in most developing countries students are made to be dependent upon the teacher's explanation. The learners are restricted to relate their experiences to real situations. And the following ideas strengthen this point.

> Many studies have shown that Ethiopian schools, *students are deprived of concrete experiences which often manifested it self in difficulties to cope with the world of reality. Important skills of managing and interpreting our environment fail to transfer at the school level due to the abstract method of teaching which is still common among Ethiopians schools (Ibid. 41)*

Instructional materials can include from the simple school or local made item to those sophisticated materials produced using modern technological tools. Schools stand first in producing low cost or local made instructional materials. The role of teachers, and student's participation should be taken in to account. When thinking about the instructional materials the environment around the school or the vicinity of the village should be considered as the major source.

Those materials can be " concrete" models, specimens, simulators, objects- those that allow physical involvement of learners; or" abstract" those that allow imaginative involvement of learners with a minimum of physical involvement or sensory involvement learning with written or spoken words (Amare, 2000:1) They included all the things which are manipulated, observed, seen, heard, touched, read and talked about. Included in such categories could be such simple and traditional technologies as earth- made model to more sophisticated technologies as animated computer graphics (Ibid. 2000:4)

Utility of Instructional Materials

The classroom interaction requires selected materials and methods of instruction. The choice and implementation of this vital materials is affected by a number of different, but interrelated

factors, that can have a positive or negative impacts on the whole process of teaching and learning. The skill and experience of the teacher, the nature of learners, classroom sizes (population of students in a class), suitability of place, time and conditions can be mentioned as examples of the factors.

A frequent hindrance to fruit full engagement in the effectiveness of classroom practice, and other related educational school activities have been the low level of skills and experiences of teachers. Since teaching is a complex problem that can be conceptualized in many different ways, using alternative models, analogies etc. It is important to have the necessary knowledge and skills in order to utilize instructional materials for better achievement in education.

The selection and application of appropriate instructional materials depends up on the skill and talent of teachers. Availability or more use of instructional materials how ever, does not guarantee effective teaching. It is their care full selection and skillful handling by the teacher that renders them useful in facilitating learning. It is therefore, for teachers, especially at the beginning, to become familiar with the various types of instructional materials as well as the value that can be derived from their proper use.

Anderson (1956) noted, if we want to secure the best kind of learning materials for students, we need to spend considerable amount of time thinking together as a faculty about the purpose of our programs and about the kinds of materials that will give the student desirable kind of experiences and serve these purpose. Having an important knowledge of selecting and skill of managing and interpreting be comes Necessity.

CHAPTER THREE

3. Research Design and Methodology

3.1. Research Method

In order to have clear concept of the nature of the problem (factors influencing the implementation of problem solving approach in the primary schools), descriptive survey methods of study was employed because it appears suitable for refining the research tools such as questionnaires, observation and documentary analysis. The relevance of this method for such purpose has been confirmed by Best and Kahan (1998) and Gall, Berg 1996) et al.

3.2. Source of Data

The sources of data for this study were:

- Primary school teachers and principals
- Experts of curriculum development
- Educational supervisors of the sample Weredas.
- Upper primary (Grade 5-8) students.
- School documents.

3.3. Sampling Procedures

The study has included 50% of the weredas in the southern zone administration and 45%of the second cycle primary schools. Four weredas were randomly selected, Enderat, Hintalo wajirat, Alaje, and Alamata. The eight weredas of the zone were classified in terms of the size schools, their location and distribution in the Zone. Following the quota sampling procedure from

Weredas having six and above complete primary schools, 3 school were selected and from weredas having less than six complete primaryschools2 second cycle primary schools were selected using simple random sampling.

All available Teachers who are engaged in teaching in Grades 5-8, curriculum development experts who have participated in the textbook development, all available Wereda educational supervisors of the four Weredas were included in the study. In addition to these 180 students were selected with simple random sampling (5 students from each grade level). The ballot technique was employed for random sampling of the Wereda primary schools and students.

3.4. Data Collecting Instruments

3.4.1. Questionnaires

The researcher has used both closed and open-ended structured questionnaires. The open-ended questionnaires were used to enable respondent to express their feeling without restriction. Four types of questionnaires were prepared. The first questionnaires was prepared for the officials of supervisors who focused on their effort to assist teachers and make follow up on the implementation of the newly introduced approach. They were requested to respond by selecting from the given item alternatives. Another questionnaires was prepared for principals and teachers and were requested to respond about the School suitability and facilities, their training background, their attitude to the profession, how they implement the approach and the content and organization of the textbooks as well as teachers guide. In addition to this, teachers and principals of the sample schools requested to give ideas about resource and instructional material availability supplementary instructional materials. Experts were responded using their

level of agreement about the student text books and teachers guide preparation. their training back ground the available facilities and situations during text preparation

Except the questionnaires for curriculum. experts all the questionnaires were prepared in English language and were translated to the regional language Tigriagna in order to convey information without difficulties. The questionnaires were pre-tested on the sample respondents before they were used for data collection purpose. The necessary correction and amendments were made on the prepared questionnaires based on the comments and given criticism during pre-testing.

Covering letters, which include the purpose and importance of the study, and assurance of confidence for respondents with signature of the researcher, were attached to each questionnaire.

The questionnaires were administered by the researcher him self, and one other selected assistant in 15 days. The assistant was a diploma holder in adult education and serving as educational officer in the wareda. The assistant was offered with the necessary orientation before; he started the data collection.

3.4.2 Observation in the classroom

To gather more reliable information, observation in the actual classroom teaching and learning process was used as additional data gathering instrument. Observation checklist was also employed to collect the data. A minimum of three periods observation time was taken for

collecting information in each sample schools focusing mainly on teacher and students interaction, classroom population and facilities. The classroom teaching and learning observation was mainly focused in science and mathematics subject lessons. Observations for science and mathematics subjects were given enough emphasis because they are more related to the problem solving approach than the other subjects.

3.5. Methods of Data Analysis

The descriptive survey quantitative and qualitative data analysis was used. The gathered data, were tabulated in to numerical data, and organized and interpreted.

In order to convey ideas to the reader in a way easily understandable, tables showing, the item alternative responses and the respondent's number were converted in to percentile.

The data were interpreted and analyzed on the basis of the information gathered as shown in the tables of each case related to the leading questions

CHAPTER FOUR

4. Presentations and Analysis of Data

4.1 Some Characteristics of the Respondent

In this study, teachers, principals and students of the second cycle primary schools, educational supervisors of each respective wereda, curriculum development experts of the education bureau and school documents were used as source of data.

The primary school teachers and principles were 112 in number. Only 18 of them were females. Among teachers 36 of them are diploma graduates while the rest are graduates from first cycle primary school teacher training institutes with certificate. The majorities of the respondent's age is above 30 years and have served more than 10 years in teaching and they have a weekly load ranging between twenty nine-thirty (29-30 periods).

Two third of the students age range is between twelve - fifteen years (12-15) while the remaining are above sixteen years, and the majority are male respondents

Experts from the curriculum department are with an experience of being teachers and most of them are with BA/BA.sc qualification. Majority of them has served for seven years as experts of curriculum development.

The Wereda educational supervisors age ranges between thirty-one - forty years and has served as teachers from six - thirteen years while as supervisors from three - seven years. Only one supervisor was diploma holder in library science while the rest are teachers trained from first cycle primary schoolteacher training institutes.

4.2 Opinion of Teachers to wards School situation and Facilities

The major sources of data for this study were teachers who are actually engaged in the teaching learning process of second cycle primary schools. An interpretation of the data obtained from each items is presented in detail in the following pages.

Table 1. Suitability of school to implement the problem solving approach

School Situation to employ the problem solving approach is	Respondents	%
High	13	12
Average	44	39
Low	45	40
No Response	10	9
Total	112	100

As indicated in the table majority of the respondents, 40% of them suggest the suitability of the schools to implement the problem solving approach is low. Nearly an equal number of respondents, 39% consider suitability of schools as average. Both responses show that school situations are not conducive to work and teach using the problem solving approach. Suitability of school includes availability of classrooms, furniture's appropriate number of students at a certain grade level, facilities like, libraries, laboratories, school pedagogical center, instructional material and the necessary human resources etc The suitability of the school has its own positive or negative impact in the process of realizing educational tasks. Intended objectives can be achieved in the right way whenever there are suitable school conditions.

Table 2. Suitability of class size (population) to implement the problem solving approaching the schools

Number of students	Grade level							
	5		6		7		8	
	School	%	School	%	School	%	School	%
>70	9	100	9	100	6	67	8	89
60-70	-	-	-	-	3	33	1	11
50-60	-	-	-	-	-	-	-	-
Below 50	-	-	-	-	-	-	-	-
Total	9	100	9	100	9	100	9	100

Classrooms are actually designed under specific criteria's in order to accommodate a certain number of pupil or students. There are set rules on how to use a class for effective teaching and learning process. The type and amount of materials to be used and methods to be employed depends up on it Appropriate class size helps in facilitating teaching and learning. According to the data in table2, in grade 5 and 6 all schools 100% accommodate greater than 70 students and even the next significant number in grades 7 and 8 as indicated in the table it shows similar situation that the schools are with large class sizes having students between 60-70 per- class. In teaching and learning large classes make oral communication, individualization of instruction and assigning written works difficult. The teachers can hardly make continuous follow ups of his students on how they are tackling problems and suggest solutions.

As mentioned in the literature review part of this study class size is the concern of many educators. (Walter, 1956:212), stated that, because without having an appropriate population of students in the classroom learning cannot occur positively. Pupil's achievements, school administrative efficiencies, teacher's health, are more related to class size. (Smith 1961:57), has mentioned that a classroom population exceeding more than 25 students is inappropriate but

also makes instruction to suffer. The classroom instruction is affected by a number of factors such as cultural values and attitudes of students i.e discipline, group behavior, age, sex difference etc. Closer student and teacher relations are also more real in classes of smaller group than in the greater one's. Students learning using the problem solving approach are also easier with smaller group than with large group. Teachers can identify appropriate tasks to their students based on the needs, interests and the student's specialties etc when number of students is limited.

Table 3. Availability of instructional materials to implement the problem solving approach in the school

Availability of instructional materials at school is	Teacher Respondents	%	Supervisors Respondents	%
Very High	-	-	-	-
High	18	16		
Average	45	40	2	40
Low	39	35	1	20
Very Low	-	-	2	40
Not al all	10	9	-	-
Total	112	100	5	100

Table 3 shows only 16% of the total teacher respondents agree that school are well equipped with necessary instructional materials other than text books. And the majority of respondents, 40% of them agree that schools are equipped with different instructional materials averagely while nearly respondents of similar number, 35% of them do believe that their schools are with problems of instructional materials. Furniture's and radios are the most available materials in the majority of schools. But there are no even school equipments for sport activities and for

science teaching at the second cycle primary school level. This was observed during the data collection time in the schools. Scarcity of instructional materials retards the effective implementation of the problem solving approach. An active student self-learning through exploring concrete situation and resources is not possible with out having appropriate materials. Instructional materials availability is a major factor either to enhance or to harm the whole process of educating. With the absence of instructional materials learning tends to memorization rather than to help solve problems. In order to relate lessons in to practice, therefore, efforts to produce or supply instructional materials to schools remains necessity. It is reasonable to expect to children use the materials and equipment in regular every day use in classroom and the greater the range of basic source of materials the wider the possible scope of work, which develops the problem solving capacity of the learner.

Access of instructional materials contributes to facilitate the instructional process in schools. It makes possible to concretize and more real as well as applicable lessons. It increases student's participation and minimizes the burden of teachers talk and objectives of education can be realized easily with little or no difficulties. It motivates students learning and task accomplishments. According to the data on table 3, 40% of the supervisor respondents agree that there is very low availability of instructional materials in their respective upper primary schools. Equally the other 40% of respondents suggest that the schools are averagely equipped with instructional materials. When trying to see the whole data the dominant number of respondents falls on low and very low availability. In the teachers and supervisors questionnaire, an attempt has been made to show that all sample schools are with no laboratories. The school pedagogical centers are of great importance in producing and disseminating instruction materials but it was also observed that these centers are running

shortage of skilled manpower. The production of instruction materials is somewhat diminishing except the little efforts made by teachers. To sum up the schools are running shortage of instruction materials either that can be distributed by higher authorities through purchase or can be produced in the school by respective subject teachers and students.

Table 4. Presence of laboratories, libraries and school pedagogical centers to implement the problem solving approach in schools.

Libraries, Laboratories, pedagogical centers are available	Libraries		Laboratories		Pedagogical centers	
	No of schools	%	No., of schools	%	No, of Schools	%
Yes	5	56	-	-	9	100
No	4	44	9	100	-	-
Total	9	100	9	100	9	100

The current policy of our country gives emphasis to science subjects as a key base or factor to alleviate step by step the problems persisting in the country. The Ethiopian school standard (MOE. 1988) also demands the availability of laboratories in the complete primary (Grade 1- 8) schools in order to enable them function in the right way. But in all the sample schools there are no laboratories in the at all Teaching the integrated Science in grades 5 and 6 as well as teaching the linear science subjects physics, biology and chemistry in grades 7 and 8 requires laboratories for application purpose of contents. School laboratories are essential places where different instructional materials for science teaching are easily stored, assembled and demonstrated in order to make lessons more concrete. The availability laboratories to facilitate teaching and learning based on scientific experiences is crucial for teaching students to enable them solve problems.

The writer of this paper knows that at one time there was a laboratory with significant number of items and equipments of science in one of the sample primary schools but unfortunately all equipments and materials were not available during his visit. Officials had decided to close the laboratory and have taken all the items to another senior secondary school. In this case, it seems there is a danger of misunderstanding about the contents of primary education on the part of authorities. The contents in science subjects are not easily transferable only through talk. They can be internalized with practical activities requiring the presence of laboratories in schools.

The presence of laboratory enables both the teacher and students to make learning more practical and concrete than remaining abstract. The teacher can demonstrate small-scale experiments and this contributes to test things scientifically. Students also will be motivated to observe and test things, relate classroom lessons into their daily life. But the researchers observation in the science classroom teaching proves the inability of teachers even to use the science kits to support their daily lessons.

In Table 4, the data shows 56% of the sample schools have libraries while the other 44% do not. One can assume from the table almost nearly half of the schools do not posses libraries for serving students and teaching staff. Libraries are resource centers for getting better and new knowledge, experience, of other people of the past and current practices. Libraries serve to get many opportunities to see the work of others and widen the horizon of once own knowledge and understanding. Students can do their best in searching truth and answer for the problems of study assigned from their teachers. Skills of reading develop when there is frequent relation of the individual with reading materials available in school libraries and if it is also sustainable.

The ability of developing of searching new ideas, facts, solutions, for posed problems will be possible when there are libraries and render service to learners at regular base.

School pedagogical centers are resource centers for all subject' teachers to prepare, disseminate and assemble instructional materials produced by teachers and students or obtained from other resources. They are established to strengthen the instructional practices in schools. Well-equipped pedagogical centers help teachers to use appropriate medias, enable them to be more flexible in their teaching and to make ideas concrete. Assist teacher's to be more than mere information senders from the official textbooks. The presence of pedagogical centers enables teachers to bring about teaching that brings resourcefulness, creativity and imagination to the classroom, than a teacher who is dull disciplinarian. Therefore, as shown in table 4 almost in all sample schools the researcher has observed that there were pedagogical centers. The only variation was on the number and quality of items displayed and the display rooms.

School pedagogical centers helps to make the process of teaching and learning more interesting, concrete and applicable lessons Materials produced in the school pedagogical centers can be the result of the joint effort of both the teacher and students. The physical and mental involvement of the learners will be of great step for ward to allow the learner imaginative involvement that could increase the development of critical thinking. The school pedagogical center affords the chance to observe, see, heard, touched, read and talk about various things and problems that provoke the problem solving capacity of the students.

Table 5 Library opening hours schools to assist the implementation of problem solving approach.

Working time of libraries	Response	%
Once in a week	2	4
Twice a week	17	28
Others	40	68
Total	59	100

As mentioned in the previous table 4, 53% of the respondents agreed on the presence of libraries in the schools. The library hours of each school depends upon the availability of responsible teachers who can open during his/her spare time. Students can be more attracted to reading habits when there is material availability for the purpose and the places to read and write are always free to serve the beneficiaries.

According to the responses shown in table 5, 28% of the respondents believe that the libraries in their schools serve twice a week while the majority of respondents, that is,68 % of reported that the library works through out the week during opposite shifts when the teacher is free from meetings, extra curricula activities and of personal cases. The other group of respondents, 47% responded that the schools are with out libraries. The writer has observed when libraries were open during opposite shifts. However, it is difficult to conclude that the libraries are working in a regular base and students are with un interrupted access to reading and working in the libraries. The libraries in some schools are not functioning due to lack of rooms. When library-working hours are interrupted, finally it creates to slow down timely contact of students to reading materials and the initiation to wards problem solving approach can decrease.

Table 6 Trained school pedagogical center coordinators

Coordinators are available for pedagogical centers	Respondents	%
Yes	22	20
No	86	77
No Response	4	3
Total	112	100

Table 6 shows that most of the school pedagogical centers do not have a specially trained pedagogical coordinators who can plan, produce and able to disseminate instructional materials. Pedagogical centers are necessary to enable schools to relate lessons to reality or give life to the instructional process. The researcher observation in the sample schools proved that there were some poorly trained teachers assigned in a few of the schools however the teachers are not in a position to give service, as it is required. The presence of a pedagogical coordinator and his contribution is not only to the production and dissemination of instructional materials. He/she also is essential to the transfer of skill and technology to the teachers, students and schools to more practical and problem solving situations.

Table 7. Services rendered by school pedagogical centers for implementing the problem solving approach

Pedagogical centers give service	Responds	%
Yes	74	66
No	34	30
No Response	4	4
Total	112	100

As it was mentioned in table 4 it was proved that the presence of school pedagogical centers in each school. At the same time, 66% of the respondents in table 7 implied that pedagogical

centers render service for school educational activities. The writer's observation also proves that each school has a pedagogical center with school or locally made and low cost instructional materials. But, because all the assigned teachers are over loaded with the maximum number of periods like any other teachers in the schools they do not have enough time to open and facilitate the coordination. Therefore, it seems difficult to argue that all pedagogical centers should be opened and serve all the time for reasons of scarce human power that schools are facing nowadays. And this implies that the contribution of coordinators to the implementation of problem solving approach is missing.

4.3 Teacher interests and training

Table 8. Student's interest to the subjects offered in schools

Students interest	Respondent	%
High	37	33
Average	59	53
Low	16	14
Total	112	100

The student should be eager to learn and develop interest gradually until to meet the intended goal. According to the data on table 8, 53% of respondents rates students interest to the subjects they are teaching is average. But the other respondents comprising 33% of them consider that they have high interest. The data on the table is somewhat a positive indicator because only 14% of respondents replied that the interest of students is low and this number is insignificant. This data my strike us why the majority of students are not with high interest to the subjects. Because high interest leads students to be more motivated to lessons. The interest to attend a

lesson or a subject leads them to be challenging, more aim oriented to learning and school activities. With the increase of student's interest to learning, there is also a comparable increase to solve problems and try to give solutions.

Table 9. Teacher interest to the profession and the subjects to implement the problem solving approach.

Teachers interest to the profession and the subjects is	Respondents to the profession	%	Respondents to the subject	%
High	34	31	21	19
Average	11	10	25	22
Low	63	56	54	49
No Response	4	3	12	10
Total	112	100	112	100

The interest of learning can occur positively when both the learner and the teacher are interested in learning as well as in teaching. In table 8 we have seen that the majority of teachers claim that the interest of students is average as rated by 53% of respondents. In table 9, 56% of the respondents are not interested in the teaching profession while the other 31% are with high interest. As Keynes (1983:39) mentioned it, students with teacher's positive attitude to wards teaching and the curriculum are found to be high-level achievers in learning. Therefore, no matter how good curriculum materials are developed, and resources are available un less the teachers are with good attitude for the subjects and the teaching, the methods with their students and the profession teaching will never be successful.

The problem solving approach requires professionally committed teachers who are wiling to work with high caliber for the better achievement their students. The above data given in the table shows that there is no as such positive attitude among the majority of the teachers to

wards the teaching profession. The result of such attitude is there fore; only failures to apply the desired approach .In other words the problem solving approach cannot be implemented having teachers of low interest.

Teachers were responded about their interest to the subjects they are teaching at the current time and 19% of them responded that they have high interest while the other 49% with low interest. Most respondents with low interest assume that low level of qualification and their assignment to teach subjects for which they are not qualified as a reason to their less interest in teaching. As it is tried to compare respondents answer in table 9 one can imagine that the teachers have low professional interest and do not like to teach the subjects they are assigned. As mentioned in the previous table showing the background of respondents 68% of the total numbers of teachers in the sample schools were from lower primary school teacher training institutes. They were under qualified for the level.

Table 10. Reasons to dislike the profession by teachers

Reason For disliking the teaching profession	Respondents	%
High task load	29	21
Low respect of society	35	25
Bad working conditions	19	14
Low salary	54	40
Total	137	100

As it is indicated in table 10 teachers were requested to give reason why they have low interest in teaching profession and, 40% of them responded that low salary is the cause and the other 25% of them low respect of the society to the profession is the main reasons. High task load and bad working conditions stands as the third major reason, which covers the least number of

respondents. Teacher's loss of interest to the professing affects badly the teaching process. Because teacherswho do not love the profession may not love the children who are rushing to schools to build their feature life. A teacher who lacks positive attitude to the profession cannot be wiling to accept new changes and cannot adapt him self to put the new approach in to practice. And this implies that he/she is not with open eyes to enter in to implementing the curriculum using the problem solving approach. If things are to be well done, the individual must also want work. What individuals actually accomplish may vary widely as a function of their attitude towards work. Low moral kills the internal dynamics of a brilliant worker.

Table 11. Training of teachers to enable them implements the problem solving approach.

Teachers are trained	Respondents	%
Yes	63	56
No	45	40
No Response	4	4
Total	112	100

Table 11 deals with teachers background whether they have taken training in the profession as related to problem solving approach and 56% of them assures as they have taken training while the other 40% did not take any training. In the pervious two tables we have seen teachers have low interest to the profession and to the subjects they are assigned to teach and a significant number of them 40% are with out training. This makes difficult the work of teaching and creates low task performance in schools. Low interested teachers to teach and lack of any training might affect the quality of teaching.. In addition to this they cannot try to be competent enough to the tasks they are assigned because they are lacking the most important element (interest)

Table 12. Training period of teachers

Program of training	Respondents	%
During Pre service	8	13
During Summer	20	32
On the Job Training	35	55
Total	63	100

Primary teachers have always needed a wide range of subject knowledge and a large repertoire of professional skills. Teaching young children to read and write, see critically the world around them, to grasp and be able to apply fundamental principles, to use their developing intelligence and imagination, to live and work harmoniously with others, all these require that an effective teacher possessing knowledge and understanding of the content of the subject and topics being thought as well as skills of teaching. These are attainable through training and living in the practice of the profession.

In table 11 the respondents has been asked whether they have taken trainings related to the problem solving approach or not and as it is indicated in table 12, 55% of them has got short on the job training. The other 32% has been trained during summer courses. Almost all teachers who have taken their training about problem solving approach mentioned in table 10 also responded to the question in table 12.

Table 13. Duration of Training about problem solving approach

Time taken to train	Respondents	%
Less than a week	28	44
One-two weeks	20	32
One month	7	11
Two months	-	-
More than two months	7	13
Total	63	100

In the previous table 12, it was mentioned that teachers were responded as they have taken training during summer course and on the job short trainings. In table 13 it is attempt to show for how long was the duration of training given for teachers about problem solving approach. The majority of respondents, 51% agreed that the duration was very short and it was is less than a week while the other 22% has got one two week. According to the data on the table almost all the respondents has not taken enough training for an extended period of time.

It is understood that training time can be shorten or lengthen based on the desired objectives. But it is also essential to consider that, with comparable length of time the possibility to deal with new ideas, master new findings, to introduce ones self will be greater than in training in shorter time. In addition to this, short trainings should be continuous to update the teachers with new knowledge and skills of teaching the problem solving approach.

Table 14 Frequency of applying problem solving approach by teachers in teaching

Teachers use of the approach in teaching	Respondents Teachers	%	Respondents Supervisors	%
Always	23	21	1	20
Rarely	80	71	3	60
Not at all	9	8	1	20
No Response	-	-		-
Total	112	100	5	100

Table 14 shows the frequency of applying the problem solving approach during teaching. The highest number, 71% of them responded as if they use it in rare cases. And a small portion of the respondents, 21% answered as they apply it always. The environment around the school and the place in which each student are living is full of problems, which needs attention to observe, to test and give solutions. Creative teacher should be concerned about the approaches valid to solve these problems The low level of trainingg, interest, scarcity of resources for successful instruction could be some of the reasons for the un successful implementation of the problem solving approach. There for, according to the data in the above table a lot of work is remaining to bring about changes in the teachers quality for the implementation of the problem solving approach.

As it is pointed out in table14, 60% of the respondents engaged in the activity of educational supervision answered, that it is in rare cases that the teachers employ problem-solving approach during teaching. The frequency of employing the method is less and this may due to the lower level of awareness of teachers mentioned in table 43. Teachers are limited in their day-to-day teaching activity to other approaches than to give emphasis to the problem solving. Employing

problem solving in rare cases means making students to be far away to see things critically about what is going on around and making students to use their texts in the traditional way of learning.

Table 15. Problems of teachers to use the problem solving approach

Teachers face problem to apply the approach	Respondents	%
Yes	90	80
No	18	16
No Response	4	4
Total	112	100

Teachers were requested whether they face problems to apply the problem solving approach during teaching and 80% of them replied yes. These was observed when teachers are facing problems to implement the problem solving approach in their dally lesson. The reality in schools teaches us that much of the teacher's preparation emphasizes the acquisition of subject knowledge with too little emphasis to create better understanding of and skills in the use of a variety of pedagogical approaches, which motivate students to enter to the areas of higher order thinking skills. The cases may be rooted from their lack of professional interest and the shortage or absence of training on how to use it in daily lessons.

Table 16. Source of difficulty to apply problem-solving approach

Problems faced to apply the approach	Respondents	%
Large class size	84	75
Lack of mastery of the subject	15	14
Lack of skill of selecting methods	31	27
Lack of awareness on what problem solving approach is	15	14
Lack of commitment	9	8
No Response	-	-
Total	154	138

Respondents were asked to give answers about the factors limiting them not to use the problem solving approach. As shown in table 16 the main causes were the presence of large class size as responded by 75% of the teachers and lack of skill of selecting appropriate methods 27%. Academic capability or mastery of the subject matter 14% and lack of commitment also are assumed, as factors that limit the utilization of problem solving approach.

As has been tried to mention in table 2 classrooms were found to be over crowded. There were great numbers of students than should be accommodated in any normal classroom. Such crowded classes are sources of difficulty to manage, to know students strength and weakness. The attempt to give special support to students will also become difficult. Assignments cannot be frequent, human contact is also limited. Besides, teacher's awareness and level of training and their experience has another contribution to limit teachers in applying the problem solving approach as frequent as possible.

Table 17 Inter staff training in the primary schools to help them build their skills of teaching

School training among staff members and training organized by supervisors.	Teacher Respondents	%	Supervisors respondents	%
Yes	54	48	1	20
No	56	50	4	80
N0 Response	2	2	-	
Total	112	100	5	100

Table 17 is used to show whether there is an inter staff training culture or not. Inter Staff training is the most important and effective means of enriching the skill of teaching of individuals or collective performance of teachers, 50% of the respondents assure that there is no an inter staff training culture in their respective schools. The other significant number of respondents, 48% believes on the presence of training among staff members of the schools. Trainings should not only flow form other bodies but should also be part and parcel of the each school planes. The principal's effort in organizing seminars, workshops and shortened staff trainings can contribute to the wealth of teaching and helps to minimizing the problem related to teaching in schools. Staff training enriches teacher's ability of using the problem solving approach. The data in this table indicates that there are no follow-ups and serious considerations to take into account staff training as potential instrument to alleviate educational problems.

Organizing training and discussion forums stands as one of the main tasks of supervisory activity. The purposeful task of supervision should help to identify the problems encountered by schools and there should be a plan to take an action to minimize the problem. It should enable teachers to be conscious about the difficulties they are facing and also help them to see other options that assist them to perform in a better way. Training is an essential factor in

introducing teachers to new methods of teaching, ways of accomplishing designed tasks. It is a means, which lead to true solutions, and enables professional to seek immediate remedies to problems they encounter. But according to the data in table 17 the greatest number of respondents 80% does not organize training for teachers under their supervision. This indicates that supervisors are not practicing one of their major tasks, which should concern them for better results in the field .The data still shows that even there was no attempt to alleviate the problems of teachers.

Table 18. Training related to problem solving approach

Inter staff training about problem solving approach	Respondent	%
Yes	42	78
No	12	22
No Response	-	-
Total	54	100

In table, 17 we have seen that there were few respondents who agreed on the presence of inter staff training in schools. Table 18shows if the training was related to problem solving approach. As proved from the table 78% of the respondents agrees the trainings were related to problem solving approach. Although the data of this table shows 72% this number covers 37% of the total respondents. The attempts to make inter -staff training in the schools are somewhat to be appreciated though not satisfactory.

Table 19. The Introduction of problem solving approach to schools

The approach is introduced in to schools	Respondents	%
Yes	22	19
No	90	81
Total	112	100

Table 19 shows the response of teachers whether they assume the problem solving approach is introduced to schools or not. The greatest number of respondents, 81% does not consider that it is introduced in to schools. This implies that they are not using the approach in the teaching process. It shows, yet, the implementation of the approach is not practical.

Table 20. Reasons for not to be introduced in schools

Reasons not to introduce problem solving approach in to schools	Respondents	%
Lack of training Back ground	52	57
Lack of Resource	31	34
Lack of commitment	7	9
No Relevance	-	-
No response	-	-
Total	90	100

Teachers were requested to give reasons why the problem solving approach is not introduced in to their schools and 57% of them considered the training background of teachers as the cause while for 34% scarcity of resource was found the main obstacles.

The essence of an effective teacher lies in knowing what to do to facilitate pupils learning and being able to do it. This is also possible when adequate training is offered to the teachers. It is essential to know that; one of the most important purposes of teaching is to equip students with the tools necessary to face their own individual futures confidently. This confrontation

involving problems. and so problem solving in the school can be truly introduced when teachers are armed with the necessary technical knowledge and schools are supplied with instructional resources.

Table 21. Students learning through project activities

Projects are used for learning	Responds	%
Yes	32	29
No	80	71
No Response	-	-
Total	112	100

Most teachers do not give project activities to their students. As the data shown in table 21, 71% of the respondents do not use project related lessons. The project task is one of the most valuable methods of teaching and learning in order to develop the problem solving ability of learners. But according to the information in table 21 this major element is missing. Even the 29% of the response indicates that if teachers use the project method, it is not much significant as should be exploited by teachers to realize the problem solving methods. Teacher's effort to motivate students by presenting list activities and alternatives does not seem encouraging.

Table 22. Student effort to plan their own experiments

Students use to plan their own experiment	Respondents	%
Yes	34	31
No	73	65
No Response	5	4
Total	112	100

Subjects like the integrated science and linear subjects in the upper primary school are the major areas of emphasis in the policy of the country. Contents in these subjects require

experiments that can be easily handled by teachers. There are also contents that can be experimented by the students under the supervision of the teachers and some others by students them selves. The development of higher order thinking skills has direct relation with such activities. The student with certain autonomy of making experiment will gain more experiences and can attain better results. The data in table 22 shows that limited number of students try to make their own experiments only 31%. The majority of respondents assured that, 65%do not plans to demonstrate experiments. The problem solving capacity will be restricted or limited if lessons in teaching and learning are not supported by experiments. Experiments are the basis to enrich the student's problem solving ability of the student.

Table 23. Assignments related to environment are given to students

Presentation of environment related assignments are given	Respondents	%
Always	12	11
Rarely	93	83
Not at all	9	6
No Response	-	-
Total	112	100

The goal of education is mainly aimed at making the natural and human environment conducive for life. Through relating learning to the immediate environment learners can be able to record, organize, compare, contrast things, events and so on. Activities related to learner environment are very important aspects of problem solving. Learner should develop an under standing of the important ecological balance, effects of environmental destruction, and the need to balance economic growth and conservation through the process of sustainable development. The frequency of assignments to watch and observe once environment enables the learners to

appreciate nature. take care for resources and suggest solutions for problems etc. The learner will understand about things existing conditions happening in the environment and becomes aware as they can affect his life directly or indirectly. The problem solving skill of an individual can help him to live in harmony with his environment. The current reforms in education highly emphasis and focus in attaching lessons to solve environmental problems. But as the data in the table shows the efforts made to relate students learning to their localities seems lagging as 83% of respondents pointed it. This implies that, they do not focus on the value that can be achieved through relating lessons to their immediate environment

Table 24. Assistance of teachers to their students to select problem of study.

Teacher assists students to select problems of study	Respondents	%
Yes	90	80
No	22	20
No Response	-	-
Total	112	100

Teachers are responsible professionals to assist students in identifying and selecting problems for learning. The timely follow-ups and keen concern is the base for easier and better results. According to the data shown in table 24, 80% of the respondents agree that teachers help students select their own problems. The assistance of the teacher gives a great contribution for student's problem solving abilities and enhances the interest to identify relevant issues, problems to be solved and cope with the existing situations.

Table 25. Formulation of problems for students study

Problems are formulated by	Respondents	%
Teachers	40	36
Students	8	7
Teacher and students	64	57
No Response		
Total	112	100

In table 24 it has been found that teachers were making efforts in assisting students to select their own problems of study. In table25, 57% of respondent agree on the formulation of problems by teacher and students, and this shows that there are common efforts between the teacher and students in sharing responsibility.

Autonomy and initiative prompt student's pursuit of connections among ideas and concepts. Students who frame questions and issues and then go about answering and analyzing them take responsibility for their own learning and become problem solvers and perhaps more important, problem finders. These students in pursuit of new understandings get led by their own ideas and informed by the ideas of others. These students ask for, if not demand, the freedom to play with ideas, explore issues, and encounter new information. These methods of educating citizens therefore, paves the way for further investigation of things, events and leads the learner for further problems findings and solutions,

Table 27. Selection of Methods of Teaching in order of priorities and Frequencies of implementing problem solving approach.

	1st choice		2nd choice		3rd choice		4th choice		5th choice		6th choice		7th choice		8th choice	
	Response	%	Response	%	Response	%	Response	%	Response	%	Response	%	Response	%	Response	%
Formal Lecture	25	22	12	11	10	9	7	6	1	.9	-		2	1.8	3	2
Informal Lecture	53	47	6	5	7	6	-	-	3	2	-	-	1	.9	1	.9
Discussion	21	12	33	30	6	5	3	2	-		-		-		-	
Discovery	2	1.8	-	-	1	.9	2	1.8	6	5	6	5	9	8	5	4
Inquiry	6	5	13	12	32	29	11	10	1	1.8	-	-	2	1.8	-	-
Case study	1	.9	-	-	2	1.8	4	3	2	1.8	9	8	11	10	-	-
Project	2	1.8	-	-	2	1.8	2	1.8	4	3	3	2	5	4	3	2
Field Trip	1	.9	-	-	2	1.8	3	2	4	3	4	3	16	14	2	1.8

The data in table 26 shows the priorities of teacher's selection of methods of teaching. The majority of respondent's, 47% first choice is informal lecture while the other 22% favors formal lecture. A significant number of respondents also use discussion as second method of teaching. Surprising enough it is a puzzle how they could use the formal lecture in the primary schools which is difficult to make communication between teacher and students. The other most valued methods that could help students to compare between things, make them more problem finders, solution seekers, enable them search evidence for wise decision and develop critical thinking are not well exploited as shown in this table

The researcher classroom observation has also proves that the teachers were only using the informal lecture as a medium of instruction. There were rare cases in which students and teachers try to shift in to discussion type of methods at the intervals of teaching. There were no as such attempts to make students to make them learn in a group form. The researcher observes that there were tropics suitable to teach students through simple experimentation in science subjects but the teachers never think about it. The students were not active participants. Rather they were passive listeners .The learners can be active problem finders as well as solution seeker if they were thought through the inquiry, discovery, and case study field trip etc. These methods help students to observe their environment identify and gather relevant data and suggest tentative answers. Therefore, the absence of using the appropriate methods cannot help to implement the problem solving approach.

Table 27. Training offered to teachers to teach in large class sizes

Training was given on how to teach large classes	Respondents	%
Yes	13	11
No	95	85
No Response	4	4
Total	112	100

Earlier in this part of the paper, in table 2, an attempt has been made to show about the average number of students in one class. As was pointed in table 2 the average number was greater than 70 students per-class. In table 27 teachers, still claim that 85% of them do not get any training, which helps them to teach in large classes in order to help them to implement the problem solving approach.

Having an appropriate class size was mentioned as one of the main concern of educators. Learning is assumed to happen positively under appropriate situation. As Gibbs, Cited in Barneit (1995:162) pointed in the literature review of this paper the presence of large class size in schools may create

- Lack of clarity to propose and lack of knowledge about progress.
- Lack of opportunity to discuss about educational task and student problems
- Students may also be less known by teacher etc.

4.4 Student Textbook and Teachers Guide related opinions

Table 28. The suitability of textbooks to teach problem solving approach.

Textbook quality are	Respondents	%
Highly suitable	25	22
Average suitable	47	42
Low	38	34
No Response	2	2
Total	112	100

One of the most frequently used and available educational materials in schools is student's textbook. Student's independent and group learning be it in the class room or out side is possible when there is an access to get textbooks. But the textbooks should be appropriately organized, should be suitable for the student to take notes, work and study. The development of higher order thinking skills is possible when textbooks are well organized for reading, working and have varied assignments. The textbooks suitability as cited in table 28 is prepared at average level because 42% of the respondents agree with this idea while nearly similar number of respondents 34%believes the textbooks suitability for teaching using the problem solving approach is low. There fore, the textbook preparation as mentioned in the table 28 is some what demanding farther improvement because the chance to review or repeat, checking re-call, opportunity to learn at ones own rate as mentioned by (Lab Harries 1960, Risk, 1958, Brown, Oke and Brown; 1980) is possible when they are prepared in the right way.

Table 29. Limitation of the textbooks to teach the problem solving approach

Shortcomings of text books is	Respondents	%
They invite to cover the portion Rather than to deal in depth	31	36
They are Full of information but does not lead to application	24	32
They Lacks different methods of presentation	23	27
The Information does not lead to solution	7	8
Total	85	100

We have mentioned that the textbooks suitability for teaching students using the problem solving approach is rated by 42% of the respondents in the previous table 28 at average level and at lower status by 34% of respondent. Another question was presented to respondents as why they have rated it as an average or low.

Table 29 is therefore, designed for further information related to the quality of the textbooks. According to the data in this table 36% of the respondents agree the textbooks invites to cover the portion than to deal in depth. Others about 32% also understand the textbooks, as they are full of in formations that do not lead to application.

The content of student's textbooks should not force teachers only to cover the portion. If any teacher is only aiming at to cover the text he/she is doubt less making a mistake he/she is miss-educating the children and youth. Because the teacher primary focus is attributed to printed counts while knowledge and experience behind them is over looked As mentioned by Leu, (1999:7) that the present text books consists a long chapter of information followed by re call

question (true/false, fill in the blank, multiple-choice.). With a very little that requires students to use information in more complex ways. Most of our materials keep with in the lower end of taxonomy and emphasize what bloom calls knowledge. The problem solving approach is mainly aimed at developing critical thinking and the textbooks should be developed in line with the problem solving approach.

Table 30. Text qualities to entertain student's difference

Textbooks are prepared to entertain students differences	Respondents	%
Yes	52	46
No	55	49
No Response	5	5
Total	112	100

Another question presented to the respondents was dealing about whether the prepared textbook recognizes student's difference or not. As pointed out in table30, 49% of the respondents do not agree while the other 46% do assume, as the textbooks are prepared in the way they entertain student's differences. It is important to note that textbooks developers should take in to account the different levels and back grounds of students when they write the materials. In this table nearly similar number of respondents 46% do express their point of agreement that the textbooks are prepared in a way that can entertain the difference of the students. But some how, the data shows no significant difference between those who argue the textbook recognizes student's difference and those who do not agree. Contents and organization of any textbook prepared to teach students must be within the grasp of the students. Contents and exercises must be available in terms appropriate level to the pupil.

The availability of content and exercises which feet to students difference help them to learn according to their level understanding and abilities to deal with problems and suggest solution when necessary. Textbooks prepared in line with student's specialty helps the teacher move the class teaching to be more interesting and more productive.

Table 31. Availability of variety of exercises in the textbooks

Different exercises are available in the text books	Respondents	%
Yes	88	79
No	24	21
No Response	-	-
Total	112	100

Student's textbooks are prepared for purposes of educating or facilitating learning inside and out side the school. Availability of variety of exercises is crucial because the learner can do their best using the textbook with or without the assistance of teachers. Table 31 proves that the textbooks are having different exercises. This may enable learners to study the respective subjects by their own speed and deal with the problems solving approach-using variety of exercises.

Table 32. Levels of learning outcomes accommodated in the textbooks

Types of learning out comes in the text books	Respondents	%
Simple learning out comes	7	6
Higher level thinking skill out comes	8	7
Both simple higher level	68	61
No Response	29	26
Total	112	100

In table 31 most respondents agree that the textbooks have been developed with variety of exercises. And in table32 the respondents assure the content in the text are designed to develop

both simple and higher order level learning out comes. The attempt to accommodate variety of exercises of different level with in the textbooks shows that there are relatively strong sides on the part of the text preparation. The presence of the higher order learning outcomes means laying the ground to help the implementation of problem solving approach in the positive way. Development of critical thinking is the product of problem solving approach.

Table 33. Availability of teachers guide for each subject teacher

Teachers guide are available	Respondents	%
Yes	105	94
No	7	6
No Response	-	-
Total	112	100

Table 33 shows the presence of teachers guide for subjects offered in the sample schools. The majority of the respondents, that is 94% of them assure that there are teachers guides available for which they are assigned to teach. Availability of this material helps the teacher to practice the problem solving approach in presenting optional ways exploiting the various methods and techniques of teaching.

Table 34 Quality of the teacher's guide for teaching students using the problem solving approach.

Teachers guide are helpful for teachers to implement the problem solving approach.	Respondents	%
Yes	44	39
No	64	57
No Response	4	4
Total	112	100

As the responses in this table shows that 57% of them agreed on the poor quality of teachers guide to assist teachers for teaching through problem solving approach. But another significant number, 39% of the respondent agrees that teachers guide helps teachers in teaching. The first groups of teachers assume that the teacher's guides are with limitations to serve them as a guide. This indicates that, the teachers guide do not offer advises to the teacher about teaching specific subject contents. It is not written in practical terms. It does not include content and methodology suggestions, resource details easy and difficult sections etc. so that, the teachers guides do not help teachers to teach using the problem solving approaches.

Table 35. Limitation of teacher's guides

Shortcomings of teachers guides to teach using problem solving approach	Respondents	%
Lacks appropriate methods	27	43
Lacks appropriate examples	14	22
Lacks appropriate mechanisms of evaluation	13	20
Lacks information what to teach	8	13
Does not help to plan daily less plan	1	2
Total	63	100

Table 35 deals about the reasons related to the limitation of teacher's guides to teach using the problem solving approach. Approach. Therefore, as the data indicates in the above table 43% of the respondents believes it lacks appropriate optional methods while the 22% believe it does not give appropriate examples. All the above factors are taken as shortcomings of the teachers guide though the degree varies. The only agreement of respondent's seems that the teachers guide can help to plan lessons. There fore, development of the teachers guide requires being helpful for teachers to make lessons more student center and enabling students to solver

problems. The appropriateness of the teachers guide plays an important role in helping teacher's present alternative methods of teaching.

4. 5 Supervision Related Opinions of Teachers.

Table 36.The effectiveness supervisors from wereda educational office to assist teachers in implementing the problem solving approach.

Effectiveness of supervisors is	Teacher Respondents	%	Supervisor Respondents	%
High	11	10	1	20
Average	40	36	2	40
Low	50	44	2	40
No Response	11	10	-	-
Total	1	100	5	100

Supervision is a planned, coordinated activity of educational works aimed at assisting professional workers engaged in educational tasks. Improvement of teacher's performance can be attained through supervision. Staff development and classroom improvements are related to supervision. According to table 36, the responses of teachers indicate that the supervisory activities in the schools are low. As seen from the table 44% of the teachers agrees the help given by supervisor is low. Another 36% also consider it as being average in helping the teaching and learning process .The supervision from the wereda (district) educational offices does not seem to be appreciated by the respondents.

Supervisions are aimed at giving technical assistance to the teacher and school administrators on how to do their work the best way. It also enables to create a good atmosphere of work place and relationship between the staff members with in a certain organization and other related institutions. As it is indicated in table 36 supervisory professional assistance to schools

is rated as average by 40% of the supervisory respondents. While the other 40% respondents rate the support to be low.

It is essential to provide support and services directly to teachers to help them improve their performance in working with a certain group of students. This kind of support makes it possible for teachers and supervisors to examine plans for instruction observe and analyze instruction to what is planned, what happened, and what results were achieved. The process is essentially a problem solving.

Table 37 The culture of inter staff supervision with in the schools

Inter staff supervision is available in schools	Respondents	%
Yes	101	91
No	3	2
No Reponses	8	7
Total	112	100

An inter staff supervision is the most vital supervisory activity. Because it is from with in the school staff, it is the most easily available to make frequent contact between the entire staff members. In table 37 the data shows that most respondents, 91% of them realized the presence of inter staff supervision in respective schools

In reality, if we are to talk about educational supervision in its true sense, it should be made operational at the grass root level; i.e. at the school level. The mission center is the school where the actual teaching learning activity takes place. As teaching learning is a day-to-day and continuous process; the function of supervision at the school level should also be a continuous

responsibility. In this respect, the school must provide its own supervision from with in the school .The director, department heads; the senior teachers are the expected responsible supervisors. Supervision in schools can enhance the implementation of problem solving approach by generating new information's to the teachers, correcting shortcomings of instruction and so on.

Table 38. Responsible bodies for supervision in the schools.

Supervisors in school	Respondents	%
The director	12	11
The department head	16	14
The director and the department heads	77	69
Senior Teachers	7	6
Others	-	-
Total	112	100

Supervision is a professional task aimed at supporting the activity of teaching and learning. Specially assigned supervisors from the educational administrative force of Weredas or regions may be involved at certain intervals of time. However, inter staff supervisory task is the most important body to learn from each other, to comment and modify the day-to-day planned tasks. The inter staff supervisory force is the most nearest, to the school academic and administrative affairs. Therefore, the inter staff supervision is found to be more constructive because the relationship and frequency makes it more concert ground to the development and improvement of learning and teaching process. According to the data in table 38, the directors and department heads cover 69% of the supervision. The role of senior teachers and the entire staff seems very week. This may require more efforts to convince teachers to make them aware,

under stand and develop a sense of commitment towards better supervisory tasks. So that it enables them, implement appropriately the problem solving approach.

Table 39. Frequency of supervision in the school

Frequency of Supervisory activities	Teachers Respondents	%	Supervisors Respondents	%
Once in a semester	68	62	4	80
Twice a semester	34	30	-	-
More than two times	-	-	-	-
When the need arises	-	-	1	20
Not all	3	2	-	-
No Response	7	2	-	-
Total	112	100	5	100

As it is pointed out in table 39 supervision is made in the upper primary schools. But the number of supervisory periods or times are very rare, 62% of the respondents answered that there is supervision only once in a semester. The other 30% of them has responded, as there is a supervision twice a semester. Therefore, as it is proved from the data the frequency is too limited so as to give professional assistance to teachers, to identify problems encountered by teachers and students in implementing problem solving approach. To check if the school atmosphere is conducive for realizing the planned activities supervisors are supposed to see all academic and administrative affairs of the schools. As it is pointed out in table 39 the number of supervisory times in schools offered by Wereda educational supervisors for the purpose of professional assistance is twice a year as 60% of the respondents agree.

Besides this, the other respondents agree that either once a year or when the need arises. When one tray to understand the responses, that, the supervisory task takes place in the school when the need arises it implies that it is not used in a pre- planned way. Supervision is a purpose full

activity. It requires planned accomplishment rather than spontaneous. When one is trying to see to the data in the above table the frequency does not seem satisfactory. The reason behind for the absence of frequent supervision in schools may be the absence enough number of supervisors to the large number of schools with in each Wereda. The supervisors assigned in each wereda are also responsible for the whole lower and upper primary schools, in addition to this, these people are engaged in other administrations roles. They are occupied with various tasks, and this fact limits not to give a frequent direct assistance to the respective schools.

The need for quality control of instruction and curriculum development will continue to be an important function of instructional supervision. Teachers desire and have a need for instructional services. Direct service to teachers to help them improve their performance with a particular group of students, will continue to grow in importance. Frequent professional assistance to schools and teachers should be regarded as the possibility to provide climate and structure to deal with possible negative outcomes, such as poor teachers motivation.

4.6 Opinion of Supervisors to School and Supervisory Activities

Educational supervision is a system in school operation with distinct purpose, competencies and activities that are employed to directly influence teaching as to facilitate students learning. Supervision as related to instructional process is aimed at helping, supporting and serving as well as coordinating the functions of schools. Supervision helps in creating a link between schools and the various levels of decision-making forces so as to enable and to bring about effective process of teaching and learning. In the following pages an analysis of the data

gathered from the supervisory personnel's of Wereda (district) educational officers has been treated in detail.

Table 40.Supervisors level of Training

Supervisors are trained	Responses	%
Yes	-	-
No	5	100
Total	5	100

Training is an important aspect in developing and increasing the human efficiency in order to attain objectives set. Organizations give pre-service or in-service training for their workers to enable them work with out minimum problems. As it is mentioned in table 40, 100% of the people engaged in supervision are assigned with out getting training.

The assignment of people to definite job without appropriate training might have its own negative impact in retarding its progress or creating in efficiency. The position and responsibility of supervisors is multidimensional as mentioned in the first paragraph of this chapter because it deals, in planning and coordinating activities, and supporting teachers and the whole instructional process and these demands know how that helps to accomplish the tasks of an organization.

The supervisor should have superior technical competence that enables him/her to give professional assistance to subordinates. Supervisors need to be good problem solvers, and have a depth of understanding, ability of making good assessments. A supervisor who is lacking a

good problem solving skill cannot contribute to the better advancement of instruction in helping teachers.

Table41. Supervisor's orientation about problem solving approach

Supervisors are oriented	Respondents	%
Yes	3	60
No	2	40
Total	5	100

Table 41 shows the response of supervisors whether they have taken an orientation about the leading principle of education in the country that is the problem solving approach. According to the data only 60% of them have taken an orientation. But the remaining supervisors are with out any orientation. The result of oriented and non-oriented supervisors cannot be the same. Supervisors who lack orientation or training cannot assist teachers some thing relevant about problem solving approach like the one who is oriented. The purpose of the approach may not have the same meaning for such supervisors. These differences will reflect the same thing in the school achievements. Therefore, it is essential to have well oriented supervisors if they are going to assist and make the necessary effort for better school achievements and the implementation of problemsolving approach.

Table 42. Duration of orientation given for supervisors about problem solving Approach

Time length of orientation	Respondents	%
Less than a week	1	20
One week	2	40
Tow weeks	-	-
No Response	2	40
Total	5	100

In table 41, 60% of the respondents answered that they were oriented about the problem solving approach. As it is shown 40% of the respondents in table 42 agree their orientation time was one week while the other 20% claim the orientation was for less than a week. The important thing here is the effort made to orient the supervisors about the approach The other 40% of respondents who did not answer to the question may be latecomers to the supervisory work or recently employed personnel's. An orientation should not end at one point rather it should be continuous process of renewal of the supervisors to make them adjust to the new tasks, correct wrong deeds and assist the teaching and learning conditions.

Table 43. The extent of teacher's awareness about the problem solving approach

Awareness of teachers	Respondents	%
Very well oriented	-	-
Well oriented	2	40
Poorly oriented	3	60
Total	5	100

Any planned curriculum or any approach only becomes reality when the teacher implemented it with students in a real classroom, careful planning and developments are important, but they count nothing un less teachers are aware of the product and have skills to implement in their classrooms.

Teacher's awareness is keys pre-condition to enable them know why the approach is valid for enhancing the education of children. An insight in to the facts or the rationales to use the problem solving approach helps teachers to practice it wisely with out hesitation. As the data in table 43 indicates that the majority of respondents, 60% of them agree that teacher's awareness

is poor. Therefore, from the data given in table 43 one can imagine how difficult it is to implement problem-solving approach when teachers are poorly aware about the problem solving approach. In this case, there might not be good expectations to have good work performances related to the implementation of problem solving approach, because when there is less awareness the willingness is also less to use it as a primary tool to educate learners.

Table 44. Number of teachers employing the problem solving approach in the teaching process

How many of the teachers employ problem solving methods	Respondents	%
All of them	-	-
Most of them	1	20
Few of them	3	60
Non of them	1	20
Total	5	20

In the previous table 43, which deals about the extent of teacher's awareness, and table 44 deals with the number of teacher's employing the problem solving in teaching the students? . The data in the present table 44 also reflects similar result. The majority of respondents, 60% of them agree only few of the teachers were found to use it as a tool during teaching their students. Lack of awareness' and the necessary training can hinder teachers not to design lessons in a possible way to involve significant problems, which can be exploited and investigated at different levels. The narrowness of teacher's awareness, training, knowledge, skill and experiences affect them not to see broad range of alternatives. The limited skill and experiences influences teachers not to collect, arrange and present learning materials and experiences for their students that may used as starting point for further learning, discussion, and discovery. Poor teachers awareness

and training affects not to plan exercises. which could build further skills and knowledge the student that are directly related to problem solving approach. Therefore. as indicated in the table the data reminds us to correct the situations in the school to help them implement the problem solving approach. The researchers classroom observation in the sample schools also proved similar things. The teachers dominantly do not have previously prepared note for the students rather they use the textbooks and to write the whole text on the blackboard. Only mathematics teachers try to give class work on certain problems and use the time to correct the students works..

Table 45. Appropriateness of class size (population) in the schools

Number of students in one class is	Respondents	%
Highly appropriate	-	-
Appropriate	1	20
Undecided	2	40
Inappropriate	2	40
Highly in appropriate	-	-
Total	5	100

Effective teaching and learning depends upon the appropriateness of classroom size or population. Classroom population should be appropriate to make teaching and learning process effective. The supervisor's response in table 45 shows that 40% of them agree on the in appropriateness of class size. In the teachers questionnaires in table 2 we have seen the class size or population of students was greater than 70 students per classroom. The data on table 2 shows the existence of large class size as the major negatively influencing factor to implement problem-solving approach. The researchers classroom observation in most of the schools has proved the in ability of teachers to entertain all students' hands rose to ask and answer

questions. There were elements of students miss behaviors in giving attention to the teacher and fellow students in the classroom.

4.7 Opinion of Students to School Instruction and Facilities

Students from sample schools were selected using random sampling technique. From each school 20 students were selected students' per grade level. A total number of 180 students were participated as respondents. Two types of questionnaires were prepared for students. The first part includes alternative answers, while the 2nd part students were requested to give their agreement. The obtained data is presented and interpreted in the following pages:

. Table 46. Time-share with in a given period

Who uses more time in classroom teaching	Responses	%
Teachers to explain subject contents	117	46
Students in questioning and answering	52	20
Students doing class works	36	14
Teachers writing Notes on Black Board	51	20
Others	-	-
Total	258	100

The School instruction is given under specified time. The time distribution of a given lesson may be classified in to different activities. The teacher and students may share the time depending on the planned objectives to be attained. As pointed out in table, 46% of the respondent's consider that the teacher explanation shares to be much more. Teachers also consume considerable time to write notes on the blackboard. According to the data in this table the teachers seems to be at the center of every thing. Teacher's explanation and notes writing on the black board covers a large part of the time. The teacher's method of presentation does

not give emphasis to student's active participation. Teachers also tend to use the talk and chalk methods. This may be resulted from their previous training background and experiences. The absence of adequate resource materials to assist instruction may also restricts them to use explanation. scarcity of textbooks can also force them to write much notes on the blackboard. Because if students are with shortage of textbooks it is difficult to make them write notes of their won.

In the class room where teaching is related to the problem solving approach the learner is busy in working individual or group assignments, discuss with the teacher and classmates and is actively engaged in dealing with different tasks. The above data does not show the appropriate way of handling the instructional process that could enhance the problem solving approach. The researchers classroom observation in the majority of the schools proved that the teacher consumes the larger part of the time-share talking to students about the subject matter. The students get limited chance to ask questions at the end of the period

Table 47. The relation ship between classroom lessons with practical activities

Relation of lesson to practice	Respondents	%
High	23	13
Average	112	62
Low	36	20
No Response	9	5
Total	180	100

The goal of every lesson is to enable the learner to have un understanding of the existing reality. the development of knowledge and skills which could en able him to change the

environment to make it conducive for life. The relation ship of classroom teaching to practical life is therefore, mandatory to solve problems. Students who attend lessons related with practical activities will be self confident, self reliant; and more active agents of change.

As shown in table 47 classroom teaching was found related to practice on average. There is a connection between classroom lessons and the day today activity of students as responded by 62% of the subjects. There is an attempt by teachers to relate lessons to practice as indicated in the above table. The problem solving approach is a method to enrich the learner's capability of practicing solution-oriented tasks. The above data shows that a lot is remaining to fully exploit the approach to enhance learning and make students more capable to give solution to existing situations.

Table 48. Reasons to connect lessons averagely in to practical conditions

Causes for less relating lesson in to practice	Respondents	%
Scarcity of instructional materials	59	40
Low teachers effort	30	20
Large class size	46	31
Poor classroom arrangement	4	3
I don't know	9	6
Total	148	100

Table 48 shows that, 40% of respondents tried to point out shortage of instructional materials to be the major reason for the average or low connection of lessons in to practice. Large class size also becomes the second main reason and this is proved from the data by 31% of the respondents. Teacher's effort was also another important factor. These reasons were found to be problems of the sample schools when it was discussed in the teacher's opinions. The researchers

observation during his data collection times also proves the scarcity of resource was a major factor to connect lessons to practice. Students sitting arrangement in the classrooms were also the traditional type. Students sitting facing the back of their friends and as a result of this all eyes of students were focusing to the teacher and black board. This type of sitting arrangement limits student's interaction during lessons. The environment around the school is full of resources valuable for teaching practically. Schoolteachers should not wait until the school administration or other body affords them with instructional materials. The teacher needs to be creative and wiling enough to exploit his /her surroundings. In addition to this, if teachers are wise they can exploit the talent of their students for better achievement. If a student is made to participate In class activities related to practice at last he can be the one who generates solutions to the existing problems.

Table 49. Methods of presenting assignments for students learning

Techniques of presenting works	Respondents	%
Individual work	126	70
Working in a group	18	10
Both individual Group work	36	20
Total	180	100

There are different ways of providing assignments to students, among which are individual, pair, group or teamwork's or assignments etc. These forms of assignment can be used at different intervals depending on the objectives to be attained, the available time and the contents. As shown in table 49,70% of the respondents reported that teachers give assignments to be done individually by student, which encourage independent work. The other essential possible technique, which can contribute for creating and increasing a good atmosphere of

understanding and true sense of cooperation as well as learning from each other, is grouping. However, as it is seen from table 49 pair and group techniques are given less weight by teachers. It is not advisable to stick to only either of presenting methods or techniques. Rather it seems important to keep the balance because some students may be active during group works, or may able to solve their difficulties and problems when they are discussing with others. Problem solving may be easier when the different talents of students are used to see the same thing or problem through group work and get better chance to search for a solution and enable them to arrive at a certain conclusion about the fact. During the researchers classroom observation time he has got the chance to see when two teachers only give group assignments in grade 5 and 7 science subjects..

Students were made to rate their level of agreement on the following ideas by indicating, whether these things are done always, rarely or not applicable during the time of teaching and learning. .

Table 50. Student's level of agreement to school facilities and the instruction process

No	Item	Always (3)		Rarely (2)		Not applicable (1)	
		Response	%	Response	%	Responded	%
5	Lessons are supported by experiments	30	17	37	21	102	57
6	Students collect data about problems related to their environment	28	16	38	21	106	59
7	Students gives answers for questions through their oweninitiative	101	56	51	28	15	8
8	Students try to give solutions to problems related to the lesson	41	23	67	37	62	34
9	Students are initiated to suggest solution for problems encountered in the school	34	19	59	33	84	47
10	Students use the school library regularly	39	22	53	29	79	44
11	Lessons are supported by experiments in the school laboratory	10	6	7	4	163	90
12	Students use experiments for given questions	20	11	36	20	111	62
13	Contents in the text books are valued to solve problems in the localities	82	46	48	27	17	9
14	Teachers present lessons supporting by additional instructional medias (aids)	33	18	50	28	97	54

According to the second part of students questionnaires shown in the above scale, the responses indicated against each item given by students tends to the third choice, that is, not applicable. The only encouraging thing mentioned in the table is that the students are able to give answer to questions raised in the class through their initiatives as proved from the data by 56% of respondents. In addition to this, 46% of students agree on the textbook contents relation to solve local problems. The attempt of students to collect information related to environmental problems is weak and 59% of the respondents agree on this issue. Students are not initiated to suggest solutions observed in their school as agreed by 47% of the respondents while, 90% of the respondents reported that they had no chance to see a laboratory experiment, and the library

service is not regular as pointed out by 44% of the respondents. Teacher's effort to use supplementary instructional materials is also limited or not appreciated by 54% of respondents.

The problem solving approach makes target the learner. It is the learner who should learn by himself. The role of the teacher is just a facilitator rather than being a core of the teaching process. Student's attachment to the environmental problems benefits more to gain knowledge through critical observation, discussion with people who are expected to have better knowledge and skills about the environment.

The environment around the learner is full of different and interrelated issues. In this regard, it is important to initiate issue-centered discussions and encourage students to develop ideas and views about environment related issues as well as enable them to increase the desire to give solutions.

The problem solving approach requires testing and experimenting problems and issues based on the experience of the learner. Through experiential learning learner gets in to a process through which generalizations and conclusions about ones own experience are made. The student learns best when he is personally involved in learning process. This experience becomes the basis for observation and reflection and can be assimilated in to a theory from which new implications are deduced. These implications then serve as guideposts for acting out new experiences.

Learners are participants in an activity. They are involved in the process and respond physically, mentally and emotionally to the requirements of the activity. Students will able to

tell publicly how they feel and think and give reasons for what has happened. They share those reactions and observations with one another. But as observed from the data lessons are not supported by experiments of teachers as well as students. And this implies that, learning occurring in the schools has a very loose attachment to tasks related with experiment that could enable learners to solve problems. Student's initiation to suggest solution for problems in life is not encouraged. Therefore, it is important to note that to make students relate them to environmental issues, support lessons with experiments that enable them to suggest solutions.

4.8 Opinion of Experts on Text Book Development

For available experts in the regional curriculum Department a rating scales having 13 items were presented, and were requested to answer the items by marking their level of agreement. The experts who were made to response on this questionnaire are only those who were involved in textbook preparation during the piloting program and after that period but who have served more than one year. New employees were not included in this study to response on the questionnaires for the researcher did believe these people have no experiences as related to the situations persisting during text preparation. In addition to this the textbook quality knowledge of this new employed experts is too limited. The equivalence explanations of the rating scale were, 5 strongly agree, 4 agree 3 undecided, 2 is disagree 1 strongly disagree and the result obtained is presented as follows.

Table 51. Experts level of agreement on textbook preparation for implementation of problem solving approach

.	Item	Rating scale									
		5		4		3		2		1	
		Resp.	%	Resp.	%	Resp.	%	Resp.	%	Resp.	%
1	Adequate training was given for experts before they start textbook preparation							1	11	8	89
2	Experts were competent enough to prepare textbook using the problem solving approach as a sole base of education			1	12	2	22	4	44	2	22
3	Commission writers were well oriented on how to develop (prepare) textbooks on the basis of problem solving approach					1	12	4	44	4	44
4	Commission writers were not less complete experts in the preparation of textbooks							4	44	5	56
5	There was no time constraints during textbook preparation							3	33	6	66
6	There was enough resources and references for text book development			1	11			5	56	3	33
7	Subject editors were actively engaged in editing the textbook							1	11	8	89
8	Pedagogical editors were actively engaged in editing the textbook							1	11	8	89
9	Language editors were actively engaged in editing the textbook							1	11	8	89
10	Textbooks were developed as suitable to entertain individual difference of students	1	12	2	22	2	22	4	44		
11	Experts observe school teachers applying the problem solving methods in teaching			2	22	1	11	4	44	2	22
12	Exercises given in the textbooks are more related to higher order thinking skills	1	12	-	-	2	22	6	66		
13	Textbooks were developed with high quality in order to make real the problem solving approach	-	-	1	11	2	22	5	56	1	11

Textbook preparation needs a keen understanding of the culture, needs of a society the learner and the subjective and objective conditions of the given society. People who are engaged in the

development of textbooks should have the capacity and technical know how obtained through training and experiences. In order to be fruitful in the text development text writers need to have a good technical know how, material and other resources.

As it is pointed out in the above scale, the curriculum development experts rated their level of agreement against each given item in accordance of their understanding.. The experts strongly belief that there was no enough training given for text writers before they started to write the text books and their level of agreement was 89%. In addition to this, experts believe that they have no competency to write textbooks considering problem-solving approach as agreed upon by 44% of the respondents. The other 22%of respondents have expressed their stronger disagreement as shown in the data.

Textbook development was not only done by experts, there were also commissioned (contract) writers engaged in the task. But these writers were not also well oriented on how to prepare the textbooks on the basis of the new approach and were also less competent than the experts in writing textbooks as responded by 56% of subjects Disagree while the other 44% strongly disagrees.

The other important lesson shown in the data is the shortage of time. Time was against for experts during text preparation. There was no enough time to prepare the materials on the basis of the approach; 66% of the respondents assured that shortage of time was one of the major factors that can contribute to the deterioration of the quality of the material. A resource material in order to facilitate the work of text preparation was another factor, which was assumed as a source of difficulty by 56%of the respondents.

All respondents agree that there was no attempt to increase the input of other professionals who could contribute one way or the other to the strength of the textbook development. Such people like subject, language and pedagogical editors were missing as responded by 89% of them. This idea teaches us that the experts and commission writers were only responsible personalities during the process of text developments. The presence of such valuable individuals would have contributed in minimizing the problems of text preparation. They would add relevant things like language clarity, easiness, comprehensibility and its applicable nature and suitability to learn and teach.

The attempt to exploit the talent and skill of other resource personalities seems poor because there is no evidence as to why the contributions of editors are ignored. In principle it is not only the editors who can participate in text development to increase its quality but other personalities from the different development sectors and social groups.

The respondents consider that textbooks are not prepared in a way to entertain individual differences and this can be seen from the table for 44% of them fall under disagree. Only the other 22% agree on the preparation of the textbooks as it can entertain the different students.
The other important issue that should be taken in to account was, the respondents disagreement on the textbooks exercises relation to higher order thinking skills. The textbooks lacks incorporating exercises of higher order thinking skills as agreed up on by 66% of the respondents in the data.

As tried to point out in the above paragraphs it seems difficult to conclude that the textbooks were developed the proper way. If textbooks are not properly organized they cannot serve as a tool to attain desired objectives. Less qualified teachers cannot teach them easily. Students face difficulties to use them and become obstacle to develop self-learning. If they are not readable, attractive and are not prepared considering the psychosocial developments of the learner, then there are shortcomings that require correction and hard work to make them suitable for teaching and learning. Preparing textbooks for students and teachers is not an easy task, it is not the task of an individual expert, rather, and it is an activity, which requires a cumulative effort of different contributors. It should be a process where by different resources and imputes are exploited for its quality.

CHAPTER FIVE

5.Summary, Conclusion and Recommendation.

5.1 Summary

The problem solving approach is a leading principle of education in our country. It is found to be a timely response to change the old system of teacher centered approaches of teaching. It has the contribution to increase the learning efficiency and attention of students. The purpose of this study was therefore, to investigate the factors that influence the implementation of problem solving approach in the southern Tigray administrative zone second cycle primary schools. In order to achieve this purpose the following research questions were raised.

A. Do teachers gain the necessary knowledge and skill during their pre and in service trainings?
B. Do teachers have positive attitude to the problem solving approach?
C. Do teachers use methods that help to implement problem solving approach?
D. Are there competent professional supervisors who could give support and technical assistance to teachers on the implementation of the problem solving approach?
E. What efforts are being made by teachers and school personnel to implement the problem solving approach?
F. Do the classroom conditions permit the implementation of the problem solving approach?
G. Are the current curriculum materials (textbook and teachers guide) prepared in such away to make the problem solving approach effective?
H. Are there enough instructional facilities, which enable to implement the problem solving approach

The study was carried out in 9-second cycle governmental primary schools of the southern Tigray administrative zone.

The source of data for the study was teachers and principals of the sample schools, Supervisors of the wareda educational offices of the study area, experts of curriculum development of the Tigray education bureau and students of the sample schools attending in grades 5-8 The school documents were also used as a source of data. The obtained data from different sources of information was analyzed using percentage and the result of the study reveals the following findings.

Many scholars in the field of education stress on the need to make the necessary training for teachers in order to enable them to implement any designed plan or work. Gerhard (1998:21) suggested that teacher training, is the most significant measure should be considered next to curriculum changes Therefore:

Most teachers are under qualified to use problem-solving approach in teaching at the level but are assigned by force to teach subjects for which they are not qualified. According to this study teacher's lack, timely and appropriate trainings and these have created loss of interest to the subject. In addition to this, teachers were found to be less interested in the profession because of the low salary and low respect of the society to the profession. Therefore, this indicates that there is a negative attitude to the profession .All these factors were found to be causes for the failure to implement the approach in the classrooms. Teachers still teach in the traditional way and used the informal lecture as a dominant method of teaching, which is contrary to the problem solving approach.. Students are not initiated to see, observe, explore their environment and work their own assignments with collaboration to others and cannot learn from each other.

Supervision from Wereda as well as from the schools were not found encouraging timely and helpful in supporting the instructional process. Teachers did not appreciate support from the Wereda educational supervisors. The supervision within the school is also found as a limited task of the director and department heads, and only carried out dominantly once in a semester. The role of senior teachers and their participation in supervisory task is the major criteria in the carrier structure but in practice, it is non-existing. Supervision was found less frequent supportive and timely. The minimum effort required from teachers is not alive.

Classrooms are overcrowded than the standard and makes the instructional process difficult to support, make follow ups, correct students work, practice frequent evaluation activities and know students problems and specialties which are the elements of problem solving approach. In addition to this the researchers observation proves that the classrooms sitting arrangements are the traditional type where the student sees the back of his friend rather than enabling to face each other, discuss problems and suggest solutions.

In this study except the poor pedagogical centers, there were no laboratories at all and the number of libraries is very limited. In some schools although libraries seem existing but not alive in reality. The school pedagogical centers do not function as required. The absence of these facilities has the contribution to retard the learning process of students through problem solving approach. Low support system in assigning trained and skilled coordinators is one of the leading problems for the mal-functioning of the school pedagogical centers. Encouraging and assigning people who have interest to work as coordinators seem nonexistent.

The instructional materials designed and developed for students and teacher are not prepared and organized as to enable implement the problem solving approach. A large part of the materials are dominated by cognitive activities and encourages students to memorize and the recall facts. It also invites teachers to cover the portion rather than to deal in depth and in more applicable way. Teachers' guides were also found to be less appropriate to present optional methods of teaching and relevant examples for making lessons more concrete and clear.

5.2 Conclusion

The implementation of problem solving approach requires different but inter related human and material resources. With out fulfilling these essential elements realizing the expected objectives of education is found difficult.

5.2.1. As to the study of many educationists, there are relationships between the teacher's level of training, awareness about the desired goals and the effectiveness of teaching. In this study, 0nly 32% of the teachers were found qualified for the level. Sixty percent (60%) the supervisor respondents agreed that the teachers are poorly oriented about the problem solving approach. The majority of teacher respondents, 56% of them also suggest their professional interest was low as result of low salary and low respect of the society for the profession. Most teachers are also assigned to the grade level for which they are not qualified and according to the 44% of expert's respondents the teachers attempt to use the problem solving approach were found low. All these factors have significant effects on the implementation of the problem solving approach. Therefore:

- Lack of awareness and in adequate training and the negative attitude of teachers can be concluded as negative factors affecting the implementation of the problem solving in the primary schools. Therefore, it may be possible to assume that the training given in the teacher training institutes and colleges is not related to the intended problem solving approach.
- The refreshment trainings are too short in length of time to enable teachers to adapt them selves to teach using problem-solving approach.
- Although the data shows there, were short term trainings the teachers still relay on the traditional methods of teaching and this indicates the attempt to give immediate solutions seems very limited.

5.2.2. Supervision was not found efficient in assisting teachers to implement the problem solving approach and 100% of the supervisors do not get training related to the problem solving approach. The highest number of teacher's respondents, 44% assumes the supervision from woreda education offices is low in supporting teachers. Supervision as agreed upon by 62% of teacher respondents and 60% of supervisors was found to be in frequent, school inter staff supervision was also found to be weak. It only aims at evaluating the teacher for administrative purpose than giving assistance to increase the professional efficiency. The role of senior teachers in supervision as mentioned in the policy and carrier structure was not found to be practical. Therefore, it can be concluded that the role of supervision was not as it can support teachers to implement the problem solving approach. In addition to this the senior teachers do not play the expected role in supervising teachers and this indicates this people are either un feet not wiling to support teachers to implement the problem solving approach.

5.2.3. Classrooms are over crowded accommodating more than 70 students in one Classroom. 85% of teachers did not get any training on how to teach in large classes and 40% supervisor respondents reported that classrooms are not appropriate for teaching and learning. Student's respondents also suggest class size as factor to relate lessons in to practice. These data indicates that there is a common agreement among respondents in considering class size as a factor that make the implementation of problem solving approach difficult. The teachers have a limited time and energy to assist his students. Therefore, from this data it can be arrived at a conclusion that large class sizes have a strong effect in hindering the implementation of the problem solving approach

5.2.4. Schools were found with poor facilities, 40% of teacher's respondents agree on the availability rated as average, while 40% of supervisor respondents claim that availability of instructional materials is low. This was also considered as a crucial issue by 46% of student respondents. The little libraries that are established in few of the schools do not serve in a regular base while others do not have at all. Moreover, it proves that this factor was another obstacles for the implementation of the problem solving approach.

- Regarding the school pedagogical centers and the service rendered, the study indicates that all schools are having the pedagogical centers but they do not have responsible trained coordinators who can create the access to teachers to use different instructional materials. Therefore, schools are not efficient to assist teachers by providing the essential instructional medias and it can be possible conclude the teachers were in able support lessons for developing students critical thinking and found as factors that can be barrier for not to implementing the problem solving approach.

5.2.5. Textbooks and teachers guide organizations were not prepared as to help the problem solving approach. The majority of teacher respondents, 42% claim that the teaching material appropriateness was rated as average while 56% of experts disagree on the quality of the textbooks development to teach using the problem solving approach. Therefore, the text materials were not prepared without exploiting the necessary input that could contributor to the quality of the teaching materials.

5.3. Recommendations

Educational achievements are the out come of inter woven different factors. It is difficult to realize intended objectives, practice policies and guidelines with out considering the various things that could contribute one way or the other for enhancing the education of children. In the previous pages of this study, it is attempt to identify the influencing factors to implement the problem solving approach in our schools. The result of this study calls an effort to be rendered to avoid if not at all to minimize the problems encountering to practice the new guiding principle of our educational system. There fore, the following solutions could be suggested for better implementation of the approach.

5.3.1. Teachers' training comes first when thinking about school activities of a given society. The policy adheres to have a diploma graduates to implement the problem solving approach in the upper primary schools but the dominant number of teachers are with out training related to the problem solving approach. It is important to refresh teachers through short trainings to make them aware about the problem solving approach. In

addition to this, there should be a link between teacher training and the primary school curriculum during both the pre service and in-service trainings with the problem solving approach. Therefore, teachers should not be assigned to subjects for whom they are not qualified because it is found one of the factors to dislike teaching. An inter staff seminars and workshops should be encouraged to minimize the problem and a due attention should be given to keep the material and moral needs of teachers. The regional governments and education bureaus should sense and try to solve the problems.

5.3.2 School based supervision could contribute much to the timely instructional progress at each respective school. It can be frequent, effective and efficient at school level if it is taken as part of the day-to-day activity of each teacher and senior teachers in particular. Educational supervision at wareda level should be well trained and armed with the necessary knowledge and skills. Supervision at school level should be encouraged. The regional education bureau should consider the role of supervision as the major element of educational force for better achievement.

3.5.3 Class size was one of the major factors, which was considered as to hinder the implementation of problem solving approach. It is important to give an attention to the quality of instructions. Quality of instruction should be the focus. The standard of accommodating limited number of students in one classroom may be used as a solution to reduce the problems of the implementation of the problem solving approach. Educational planers should consider the importance of having limited number of students to keep the quality of education. The

regional bureaus, governments and the community need to see alternative solutions to keep the standard population in the classrooms.

5.3.4 The school conditions related to facilities needs to be considered seriously for the effective implementation of the problem solving approach. Libraries should be established with primary initiation of the schools them selves. Schools should allocate a certain amount of budget and could make real the presence of the libraries year after year, step by step. Concerned Bureaus should take in to account budgeting for libraries other governmental and non-governmental bodies should also be involved in assisting schools.

Laboratories are badly needed mainly for teaching science subjects. It might be difficult to assume to fulfill the necessary equipments and materials all of a sudden. But it is possible to establish schools with basic instruments and materials by establishing Mini-laboratories at the complete primary schools, or by organizing cluster schools. One school could serve the nearby schools of vicinity through programmed arrangements. Budget for such valuable instructional materials should be allocated as the budget for building schools is increasing the importance fulfilling facilities of instructional material should be considered.

School pedagogical centers should have trained, capable and skilled human power that can plan, produce and disseminate low cost instructional materials and technology. At least assigning trained person at cluster school level would minimize the problems that schools are facing and can enhance the implementation of problem solving in schools. Schools should be motivated to allocate reasonable budgets for the pedagogical centers for better practical works

to support the instructional process. In addition to this, there should be an organized structure and skilled human power at region and zone level.

5.3.5. Curriculum material development should not be the task of one or two experts. Rather, it should be the result of commutative effort of different knowledgeable and skilled professionals. Pedagogical, language and subject editors should be encouraged. Teachers impute also should be taken into account. The materials should be developed in a way to enable learners enrich them selves in knowledge and skill through problem solving approach They should contribute to the development students critical thinking. The institute for curriculum development and in particular the regional curriculum departments are highly responsible to keep the quality of curriculum materials during their preparations. Training for curriculum developers seems crucial that should betaken into consideration. Shares of experiences among regional curriculum departments may have a strong impact on the preparation of the materials.

5.3.6. Finally, the researcher recommends that interest researcher to make intensive researches on the implementation of the problem solving approach.

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Back Ground of Respondents

A Teachers

Sample Wereda	Respondents by sex			Age Range of Respondents				Academic Back ground of respondents					Respondents service years				Weekly load (No of periods per teacher in a week)		
	Male	Female	Total	21-25	26-30	above 30	Total	TTI	12+1	Diploma	BA/SC	Total	Years 1-5	Years 6-10	11 and above	Total	27-28	29-30	Total
H.Wajirat	24	7	31	2	6	23	31	23	1	7		31	2	6	23	31	4	27	31
Alaje	22	4	26	4	13	8	26	15		19		26	6	11	9	26	4	22	26
Alamata	36	4	40	2	12	26	40	26	3	11		40	-	8	32	40	17	23	40
Enderta	12	3	15	3	3	9	15	8		8		15	-	-	15	15	3	12	15
Total	94	18	112	11	34	67	112	72	4	36		112	8	25	79	112	38	74	112

B. Students

No	Grades	Sex			Age Range			
		Male	Female	Total	12-13	14-15	16 above	Total
1	5	29	16	45	27	8	10	45
2	6	33	12	45	11	15	19	45
3	7	35	10	45	14	19	12	45
4	8	32	13	45	6	17	22	45
Total	4	129	51	180	58	59	63	180

C. Experts of curriculum Department

Respondents by sex				Age Range of Respondents					Educational Back Ground					Experiences					
	Male	Female	Total	Years 25-30	Years 31-35	Years 36-40	Years Above 40	Total	TTI	Diploma	BA/BSC	MA/MSC	Total		Years 1-5	Years 6-10	11-15 year	16 year above	Total
	9	-	9	2	-	4	3	9	-	3	5	1	9	as a teacher	-	2	4	1	7
Total	9	-	9	2	-	4	3	9	-	3	5	1	9	as a experts	2	7	-	-	9

D. Wereda Educational supervisors

Respondents by sex				Age Range of Respondents				Educational Back Ground				Experiences				
	Male	Female	Total	Years 31-35	Years 36-40	Years Above 40	Total	TTI	Diploma	BA/BSC	Total		years 1-5	years 6-10	years 11-15	Total
	5	-	5	1	4	-	5	3	2	-	5	As teachers	-	2	2	4
Total	5	-	5	1	4	-	5	3	2	-	5	As supervisors	4	1	-	5
												In other	1	-	-	1

APPENDICES-B

Addis Ababa University
Department of Curriculum and Instruction
Graduate Studies Program
ADDIS ABABA

Teachers' Questionnaire

The aim of this study is to identify the major factors affecting the implementation of problem solving approach in class rooms(Grades 5-8). Be confidential that the information gathered will be used only for the research purpose. Hence , you are kindly requested to provide the necessary information which is very helpful to the quality of the research as well as to bring practical solutions to the problem.

You are not expected to write your name on the questionnaire.

Thank you very much!

Part I. General Information

1. Sex _____
2. Age _____
3. Qualification _____
4. Years of service _____
5. The subject/s you taught _____
6. work load per week _____

Part II. Research related Information.

Direction: please give your appropriate answers for the following questions using an "x mark in the given boxes corresponding to each question ***.In some of the items it is possible to give more than one answer***

A. School situation and facility Related Questions

1.The Suitability of school situation to implement problem solving method is:

High ☐
Average ☐
low ☐

C. Experts of curriculum Department

Respondents by sex				Age Range of Respondents					Educational Back Ground					Experiences					
	Male	Female	Total	Years 25-30	Years 31-35	Years 36-40	Years Above 40	Total	TTI	Diploma	BA/BSC	MA/MSC	Total		Years 1-5	Years 6-10	11-15 year	16 year above	Total
Total	9	-	9	2	-	4	3	9	-	3	5	1	9	as a teacher	-	2	4	1	7
	9	-	9	2	-	4	3	9	-	3	5	1	9	as a experts	2	7	-	-	9

D. Wereda Educational supervisors

Respondents by sex				Age Range of Respondents				Educational Back Ground				Experiences				
	Male	Female	Total	Years 31-35	Years 36-40	Years Above 40	Total	TTI	Diploma	BA/BSC	Total		years 1-5	years 6-10	years 11-15	Total
Total	5	-	5	1	4	-	5	3	2	-	5	As teachers	-	2	2	4
	5	-	5	1	4	-	5	3	2	-	5	As supervisors	4	1	-	5
												In other	1	-	-	1

APPENDICES-B

Addis Ababa University
Department of Curriculum and Instruction
Graduate Studies Program
ADDIS ABABA

Teachers' Questionnaire

The aim of this study is to identify the major factors affecting the implementation of problem solving approach in class rooms(Grades 5-8). Be confidential that the information gathered will be used only for the research purpose. Hence , you are kindly requested to provide the necessary information which is very helpful to the quality of the research as well as to bring practical solutions to the problem.

You are not expected to write your name on the questionnaire.

Thank you very much!

Part I. General Information

1. Sex _____
2. Age _____
3. Qualification _____
4. Years of service _____
5. The subject/s you taught _____
6. work load per week _____

Part II. Research related Information.

Direction: please give your appropriate answers for the following questions using an "x mark in the given boxes corresponding to each question ***.In some of the items it is possible to give more than one answer***

A. School situation and facility Related Questions

1.The Suitability of school situation to implement problem solving method is:

High ☐
Average ☐
low ☐

2. What is the average number of students in your school in one class room?

>70 ☐ 50-60 ☐

60-70 ☐ below 50 ☐

3. Availability of the necessary instructional materials other than text books in your school:

High ☐

Average ☐

low ☐

not at all ☐

4 .Is there a laboratory in the school?

Yes ☐

No ☐

4.1 If your answer for question no 4 is **yes** how often do you use the laboratory?

once in a week ☐

once in a month ☐

once in a semester ☐

once in a year ☐

others specify_____

5. Is there a library in the school?

Yes ☐

No ☐

5.1 If your answer for question no 6 is **yes** how often it functions?

Once in a week ☐

Twice a week ☐

Others specify_____

6 .Is there a pedagogical center in your school?

Yes ☐

No ☐

7. Is there a specially trained pedagogical center coordinator in the school ?

Yes ☐

No ☐

8. Does the school pedagogical center serve all the time ?

Yes ☐

No ☐

8.1 If your response for the above items is " No" give reasons_____

_____

B. Teacher Related questions

9. Students' interest to attend your classes:

High ☐

Average ☐

Low ☐

10 .your interest to wards teaching profession ?

High ☐

Average ☐

Low ☐

10.1 If your answer for No 2 is **low**, what is the reason?

High task load ☐

Low respect of the teaching profession by the society ☐

Bad working conditions ☐

Low salary ☐

11.Your interest towards the subject you are teaching?

High ☐

Average ☐

Low ☐

11.1 If your response for item No 13 is low give reasons_____

_____

12. Have you had training on how to teach using the problem solving approaches?

Yes ☐

No ☐

12 1. If your response for the above question is " yes" when did you get the training?

During pre-service Training summer ☐

During In-service Training ☐

On the Job Training ☐

13 How long was your training during the in-service Training

Less than a week ☐

One-two weeks ☐

One-month ☐

Two- months ☐

More than two months ☐

14. How frequent did you employ the problem solving methods during teaching?

Always ☐

Some times ☐

Not at all ☐

15. Did you observe teachers facing problems in using problem solving approach during teaching ?

Yes ☐

No ☐

15.1 If the answer for the above item is "**yes**" what do you think is the source of the problem ?

Large Class Size(Population Of Students) ☐

- Lack of mastery of the subject matter ☐

- Lack of skills of selecting variety of methods ☐

-Lack of awareness on what problem solving is

- Lack of commitment ☐

16.Is there an inter -staff training culture in your school ?

yes ☐

No ☐

16.1.1If your answer for the above question is "yes" was there any lesson on problem solving approach?

yes ☐

No ☐

17 Do you think that problem solving approach is introduced to your school?

yes ☐

No ☐

17.1 If your response for question 17 is "**NO** " what is the reason?

Teachers have no training back ground to this approach ☐

Lack of necessary resources ☐

Lack of commitment ☐

It does not have any relevance at this time ☐

18. Do you use extended project activities to teach your students?

Yes ☐

No ☐

18.1If your answer for the above question is "**yes**" give examples

_____

_____

19.Do your students plan their own experiments?

Yes ☐

No ☐

20.How frequent do you give assignments related to students environment?

Always ☐

Rarely ☐

Not at all ☐

21 Do you help your students to select their own problems to study and solve?

Yes ☐

No ☐

22. Who formulates the problems of study for learning ?

The teacher ☐

The student ☐

Both the teacher & students ☐

23. which of the following is the most used method of teaching and learning(applied) in your school ?put numbers (1,2,3..)which indicate the rank order of the utilization of the methods.

Example use 1 for the most used ,2 for the second, 3 for the third etc. and 7 for the least used.

Lecture

Formal lecture ☐

Informal lecture ☐

Discussion ☐

Discovery ☐

Inquiry ☐

Case study ☐

Project method ☐

Field trip ☐

23.1Give reasons why teachers are selecting or preferring the first three methods?

_____

_____

_____

24..Was there a time you get special training for teaching in large class?

Yes ☐

No ☐

C. Text Book and Teachers Guide related questions

25.The suitability of the teaching material (Text - books) for teaching students using the problem solving approach?

High ☐

Average

Low ☐

25.1.If your response for question 25 is "Average or Low "what do you think the limitation of the text books are?

The text invites teachers to cover the portion rather than to deal in depth ☐

The text is full of information which does not lead to application ☐

The text lacks different methods of presentation ☐

The text has information which does not lead to solution ☐

If any other specify _____

31.Is there an inter staff supervisory activities in your school ?

Yes ☐

No ☐

31.1 If the answer for question no 33 is *Yes* Who supervises frequently in the school?

- The director ☐
- The department head ☐
- The director & department heads ☐
- senior teachers ☐
- Others _____

32.What is the frequency of supervisory activities in your school ?

Once a semester ☐

Twice a semester ☐

More than two times ☐

Not At all ☐

APPENDICES-C

Addis Ababa University
Department of Curriculum and Instruction
school of Graduate Studies
ADDIS ABABA

Questionnaire for Educational supervisors

The aim of this study is to identify the major factors affecting the implementation of problem solving approach in classrooms. Be confidential that the information gathered will be used only for the research purpose. Hence, you are kindly requested to provide the necessary information which is very help full to the quality of the research. You are not Expected to write your name on the questionnaire.

Thank you very much

Part .I General Information:

1. Sex_____
2. Age_____
3. Wereda_____
4. Qualification_____

-12th complete_____

-12+1 _____

-Diploma_____

- BA/B.Sc._____

5Total Years of service_____

5.1 As a teacher_____
5.2 As a supervisor_____
5.3 In others _____

Part II. Research Related Information

Direction: Please give your appropriate response for the following questions using an "x" mark on the given boxes for each item *In some of the items it is possible to give more than one Answer*

1. Have you had a supervisory training before you were assigned as an educational personnel ?

Yes ☐
No ☐

1.1.If yes, for how long ?

A few weeks ☐
Few months ☐
one year ☐
More than one year ☐

2,Have you taken any orientation regarding the problem solving approach?

Yes ☐
No ☐

2.1 If yes, for how long?

Less than a week ☐
one week ☐
Two weeks ☐
More than two weeks ☐

3. How frequent do you supervise in the upper primary schools?

once a year ☐
Twice a year ☐
More than two times ☐
When the need arises ☐

4.To what extent do you think that teachers are aware of what problem solving approach is?

very well ☐
well ☐
poorly ☐

5.How often do teachers use the problem solving approach (methods) in lesson ?

Always ☐
Some times ☐
Not at all ☐

6.How many of the teachers employ the methods of problem solving approach in teaching and learning process?

All of them ☐
Most of them ☐
Few of them ☐
Non of them ☐

7.Have you had organized Training for your teachers on how to employ problem solving approach ?

Yes ☐
No ☐

8.How helpful is your assistance to your school teachers to encourage them to employ problem solving approach?

very high ☐
High ☐
Medium ☐
Low
very low ☐

9.How appropriate is the school class size (population)for teaching and learning?

Highly appropriate ☐
appropriate ☐
un decided ☐
In appropriate ☐
Highly in appropriate ☐

10.How Are the schools equipped with the necessary instructional materials to apply the problem solving approach?

- very high ☐
- High ☐
- Medium ☐
- Low ☐
- Very low ☐

11.what is the attitudinal reaction of teachers to wards implementing the curriculum using the problem solving approach?

- very high ☐
- High ☐
- medium ☐
- Low ☐
- very low ☐

APPENDICES - D

Addis Abeba University
Department of Curriculum and Instruction
Graduate Studies Programs
ADDIS ABEBA

Experts Questionnaire

The aim of this questionnaires is to provide necessary empirical evidence requiring the major factors that may influence the implementation of problem solving approach in pupils learning, there by enabling concerned individuals to be aware of the conditions and take necessary steps to improve the education of pupils.

The respondents name will not be written in any place in the questionnaires. Please answer all the questions and item frankly and honestly. Your sincere and frank responses will be highly appreciated

Thank you very much !

1. Sex _____
2. Age _____
3. Zone_____
4. Qualification _____
   - 12th complete ☐
   - 12+1 ☐
   - Diploma ☐
   - BA/BSC ☐
   - MA/MSC ☐
5. Total Years of service _____
   - 5.1 As a teacher _____
   - 5.2 As an Expert _____
   - 5.3 In others _____

Please rate your level of agreement using "x" on the given scale for the items mentioned below.

Equivalence of Explanations or the tasting scale

5. Strongly agree
4. Agree
3. Undecided
2. Disagree
1. Strongly disagree.

No	*Item*	*Rating scale*					*No opinion*
		5	4	3	2	1	
1.	Adequate training was given for experts before they start text -book preparation						
2.	Experts were competent enough to prepare text book using the problem solving approach as a sole base of education						
3.	Commission writers were well oriented on how to develop (prepare) text books on the basis of problem solving approach						
4.	Commission writers are competent enough as compared to experts in the preparation of text books						
5.	There was time constraints during text book preparation						
6.	There was enough resources and references for text book development						
7.	Subject editors were actively engaged in editing the text book						
8	Pedagogical editors were actively engaged in editing the text-books						
9	Language editors were actively engaged in editing the text-book						
10.	Text books were developed as suitable to entertain individual difference of students						
11	Experts observe school teachers applying the problem solving methods in teaching						
12	Exercises given in the text -books are more related to higher order thinking skills						
13	Text -books were developed with high quality in order to make real the problem solving approach						

APPENDICES - E

ንተምሃሮ ዝተዳለወ መጠይቕ

ናይዚ መጠይቕ እዚ ዕላማ ኣብ ምጥቃም ፀገም ፍታሕ ምምሃር ምስትምሃር ዘሎው ሽግራት ኣለሊኻ መፍቲሒ ሓሳባት ንምሃብ እዩ።

ብተማሃሮ ዝወሃቡ መልስታት ኣብ ሓቂ ዝተደረኹ ምኳኖም ኮቲ ዝግበር መፅናዕቲ ዝህልዎም ኣስተዋፅኦ ኣዚዩ ዝለዓለ'ዩ ዝኸውን።

ኣብዚ ወረቀት'ዚ ኣብ ዝኾነ ቦታ ናይ መለስቲ ሽም ምፅሓፍ ኣይድልይን ንዝግበር ምትሕብባር ድማ ኣቐዲምና ነመስግን

ክፍሊ 1. ሓፈሻዊ መረዳእታ

ዖታ _____

ዕድመ _____

ደረጃ ክፍሊ _____

ሽም ወረዳ _____ ሽም ቤት ትምህርቲ _____

ክፍሊ 2. ዝርዝር መረዳእታ

ቀጺሉም ካብ ተራ.ቑ 1- 4 ንዝቐረቡ ሕቶታት ንሕድ ሕዶም ካብ ዝተወሃቡዎም መማረፂታት ትኽክልኛ መልሲ ዝሓዘ'ዩ ዝበልዎ/ኣ ፊደል ብምኽባብ መልሲ ይሃቡ/ባ። ካብ ሓደ ንላዕሊ መልሲ ምሃብ ይካኣል'ዩ

1. ኣብ ከይዲ ምምሃር ምስትምሃር ዝነውሐ ክፋል እቲ ክፍለ ጊዘ መን'ዩ ዝጥቀመሉ?

ሀ. መምህር ገለፃን መብርሂን ብምሃብ፣

ለ. ተምሃሮ ሕቶ ብምቕራብን ብምምላስን፣

ሐ. ተምሃሮ ዕዮ ክፍሊን ካልኦት ንጥፈታትን ብምስራሕ

መ. መምህር ኣብ ሰሌዳ መዘከርታ ብምፅሓፍ

ረ. ካልእ እንተሎ ይገልፅ_____

_____

2. ኣብ ቤት ትምህርቲ ዝወሃብ ትምህርቲ ምስ ጭቡጥ ኩነታት ዘለዎ ዝምድና ከመይ ትግምግሞ?

ሀ. ዝለዓለ

ለ. ማእኸላይ

ሐ. ርክብ የብሉን

3. ኣብ ተራ ቁፅሪ ''2'' ንዝተጠቀሰ ሕቶ መልሱ ''ለ'' ወይ '' ሐ ''እንተኾይኑ እቲ ምኽንያት እንታይ'ዩ ይብሉ/ላ?

ሀ. ንምምሃር ምስትምሃር ዘድልዩ እኹል ማቴርያላት ዘይምህላው

ለ. መምህር ምስተግባር ኣጣሚሮም ስለዘየቅርቡዎ

ሐ. ቑፅሪ ተምሃሮ ምብዛሕ

መ. ኣቀማምጣ ክፍሊ ምቹው ዘይምኳን

ረ. ምኽንያቱ ኣይፈልጠን

4. መምህራን ናይ ክፍሊ ኽነ ናይ ገዛ ዕዮ ክህቡ ከለው መብዛሕቱ እዋን ዝጥቀምሉ ኣየናይ'ዩ?

ሀ. ሕድ ሕድ ተማሃራይ ብውልቀ ሰሪሑ ክመዕእ ምግባር

ለ. ብጉጅለ ተመቻቺሎም ሰሪሖም ክመዕእ ምግባር

ሐ. ካልእ እንተሉዩ ይግለፅ_____

_____

ቀሚሎም ካብ ተራ ቑፅሪ 5-14 ንዘለው ምስ ከይዲ ምምሃር ምስትምሃር ዝተተሓሐዙ ሓሳባት እትስማምዕሉ ሓሳብ ኣብቲ ሰንጠረዥ ዘሎ ክፍቲ ቦታ '' X'' ምልክት ብምቕማጥ መልሲ ሃቡሉ::

ናይቶም ነጥብታት ማዕረ መግለፅታት

- ኩሉ ጊዜ 3
- ሓደ ሓደ ጊዜ 2
- ኣይትግበርን 1

ተ.ቑ	ሓሳብ	ዋጋ ነጥብታት			ርኢዮ የብለይን
		3	2	1	
5.	ተምሃሮ ብፈተነ /ኤክስፐሪመንት/ዝተደገፈትምህርት ይወሃቦም'ዩ				
6.	ተምሃሮ ብዛዕባ ኣብ ከባቢኦም ዝርከቡ ፀገማት ጠቕሚ መረዳእታ ኣኪቦም ክመፁ ይግበርዩ::				
7.	ተምሃሮ ብዓርሰ ተበግሶኦም ነፃ ኮይኖም ንሕቶታት መልሲ ይህቡ እዮም::				
8.	ተምሃሮ ምስ ትምህርቲ ዝተተሓሓዙ ጠቕምቲ መረዳእታ ብምትእ'ሽኻብ መፍትሒ ሓሳባት ንምሃብ ፃዕሪ ይገብሩ'ዮም::				
9.	ተምሃሮ ኣብ ቤት ትምህርቲ ዝረኣዩ ፀገማት ኣለሊዮም መፍቲሒ ሓሳባት ክህቡ ይግበር'ዩ::				
10.	ኣብ ቤት ትምህርቲ ቤት ንባብ ስለዘሎ ተምሃሮ ይጥቀምሉ'ዮም::				
11.	ኣብ ቤት ትምህርቲ ቤተ ፈተነ ስለዘሎ ብፈተነታት ዝተደገፈ ትምህርቲ ይወሃብ'ዩ				
12.	ተምሃሮ ንዝተወሃቦም ሕቶታት ባዕልቶም ፈተነ የካይዱ'ዮም				
13.	ኣብ መምሃሪ መፃሕፍቲ ዘለው ትሕዝቶታት ኣብ ከባቢ ንዝርከቡ ፀገማት ንምፍታሕ ዘኽእሉ እዮም::				
14.	መምህራን ከምህሩ ከለው ብመምሃሪ ሓገዝ ኣደጊፎም የቅርቡዎዮም				

APPENDICES - F

Classroom observation checklist

1. General Information

1.1. Observers Name_____

1.2. Wereda: _____

1.3. Name of School_____Grade_____

1.4. Subject observed_____

2. **Teacher information**

2.1. Qualification (state qualification(s) of teacher (current studies)_____

3. Class room observation scale - indicators

Please ask for a lessons plan before the lesson starts

Use "x} marks for the answer you assumed it appropriate

3.1. Relevant experiences in teaching _____

Grading scale

3 Always

2 Sometimes

1 not applicable

	3	2	1
Teacher			
1. Ask qu3stions to determine learners prior knowledge			
2. Ask open ended Questions			
3. Give problems solving class and home assignments			
4. Capability of teaching through the medium of instruction (language) 5. Use appropriate instructional medias (teaching aids)			
Students			
5. Ask questions related to the topic			
6. Get an opportunity of share ideas			
7. Get opportunity to apply new knowledge			
8. Activity involved in the learning process			
9. Show an active desire intention and pleasure in learning			
Lessons			
10 The flow of lesson respond to the learners' need			
11The desks in the class appropriately arranged for specific teaching / Learning.			
12. The class room appropriate for effective teaching			
13. The teaching methods appropriate to teach lesson contents			

14. Supporting materials (Teaching aids)

What type of Teaching aids were used (specify) _____

_____

_____

_____

_____

15. What was the major strength of the lesson?

_____

_____

16. General comments

_____

_____

_____

DECLARATION

This thesis is my original work and has not been presented for a degree in any other universities and that all source of materials used for the thesis have been fully acknowledged.

DESTA ABERA TESFAY

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

DEREBSSA DUFERA (DR.)