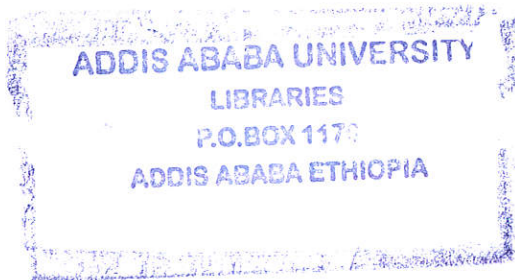


**ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES**

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PRIMARY SCHOOLS IN
ADDIS ABABA**

BY

MATEWOS MELESSE



June, 2008

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INSTRUCTION**

**ADDIS ABABA UNIVERSITY
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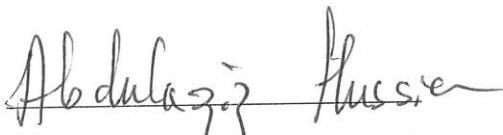
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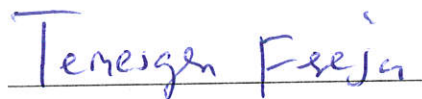
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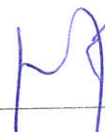


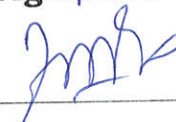
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Table of contents

Chapter One

Introduction

Acknowledgments

Table of Contents

List of Tables

Abstract

1.1. Background	1
1.2. Statement of the Problem	3
1.3. Objectives of the Study	7
1.4. Significance of the Study	8
1.5. Delimitation of the Study	8
1.6. Limitation of the Study	9
1.7. Definition of operational terms	9
1.8. Organization of the Study	9

Chapter Two

Review of The Related Literature

2.1. Constructivism as a theory of learning	11
2.2. Faces of Constructivism	13
2.2.1. Cognitive Constructivism	13
2.2.2. Social Constructivism	14

2.3. Constructivist Learning	16
2.3.1. Principles of Constructivist Learning	19
2.3.2. Learning environments	21
2.3.2.1. Authentic Learning	21
2.3.2.2. Self-directed Learning	22
2.3.2.3. Situated Learning	22
2.3.2.4. Cooperative Learning	23
2.4. Constructivist Teaching	23
2.4.1. Constructivist Instructional Principles	24
2.4.2. Constructive Classroom Environment	27
2.4.3. Constructivist Teacher	31
2.5. Constructivist Assessment	32

Chapter Three

Research Design and Methodology

3.1. Population and Sampling	34
3.2. Instruments and Data Collection Procedures	35
3.2.1. Observation	35
3.2.2. Questionnaire	36
3.2.3. Interviews	37
3.3. Data Analysis	38

Chapter Four

Presentation and Analysis of Data

4.1. Background Information of the Respondents	39
4.2. Teachers' Perception of Constructivist Teaching Strategies	43
4.3. Implementation of constructivist Strategies	52
4.4. Teachers Performance of Constructivist Teaching Strategies as observed in Class rooms	58
4.5. Hindering factors of application of Constructivist Teaching Strategies	60

Chapter Five

Summary, conclusions and Recommendations

5.1. Summary and Conclusion	62
5.2. Recommendations	67

References

Appendices

List of Tables

Table 1: Description of respondents by sex and age

Table 2: Frequency Distribution of Teachers by Qualification, Work experience and teaching load per week.

Table 3: Frequency distribution of Teachers' Perception of Constructivist Teaching Strategies

Table 4: Teachers Performance of Constructivist Strategies as judged by themselves

Table 5: Classroom performance of Teachers as Observed in Classrooms

Table 6: Factors that hinder the application of Constructivist strategies

Abstract

The objective of the study was to assess and compare the application of constructivist teaching strategies in private and government second cycle primary schools in Addis Ababa. Comparative research design was employed in the study. The subjects of the study were 126 private and 121 government second cycle primary school teachers. Data were collected from the subjects through observation, questionnaire and interviews. The quantitative data were categorized, tallied and their frequencies were determined. The analysis was made using descriptive statistics such as percentage and means. The qualitative data were organized, summarized, interpreted and described in narrative manner.

The findings of the study revealed that both private and government primary school teachers have higher perception of constructivist teaching strategies. It was also found out that there is no noted significant difference between them. However, regarding the implementation of constructivist teaching strategies, the findings of the study revealed that the strategies are poorly implemented in both private and government schools. Teachers rely heavily on direct transmission of knowledge through lecture and note giving activities. They seem to favor traditional way of teaching. The hindering factors were attributed to lack of interest in teaching on the part of teachers, lack of interest of learning on the part to students, lack of teaching materials, unsuitable class room setting & school environments, rigid time table were the common ones. Higher teaching load of private teachers and lack of parental and community support in government schools were identified as serious problems and finally, based on the findings recommendations were forwarded.

Introduction

1.1 Background

Constructivism is a theory of learning, which holds that learning should build up on knowledge that a student already has and it asserts that learning will be more effective when students are actively involved in the construction of knowledge. According to Driver (1989), the most important element of the constructivist theory is that each person builds knowledge himself actively by comparing the new information with the existing understanding.

A constructivist movement has its roots in long standing philosophical tradition. Advocates of constructivism believe that teaching is something more than presenting information. Students must apply, use or process the information.

In addition to this, constructivism represents a paradigm shift from education based on behaviorism to education based on cognitive theory. Constructivist epistemology assumes that learners construct their own knowledge on the basis of interaction with their environment. Constructivism is a fundamental departure in thought about the nature of learning and teaching. The constructivist perspective describes learning as a change in meaning constructed from experience (Newby et al., 1996).

In the traditional way of teaching learning process, students are considered as empty vessel to be filled with knowledge from the teacher. They mechanically ingest knowledge from teachers and textbooks. Students learn by being told what will happen not by constructing meaning out of their experience. Experimentation and hands on activities are undermined if not ignored. Regurgitation of facts and rote memorization dominate the process of learning. There is little room for students initiated questions, independent thought or interaction between students. Jonassen (1991) explains such traditional teaching approaches by stating that learners are told about the world and are expected to replicate its content and structure in their thinking. In support of this idea, Kohn (1997) explains that traditional method of teaching considered children as objects to be manipulated rather than as learners to be engaged. Such classroom environment hampers student's creativity and puts them at the backseat to become passive receivers of teacher's information (Anderson, 2002).

Researches done on learning and brain indicated that we do not learn by passively receiving and then remembering what we are taught. Instead, learning involves actively constructing our own meaning, we invent our own concepts and ideas linked to what we already know. In this meaning making or learning process students need activities, which require them to make personal sense of the material to construct their own meaning. In support of this idea, Donovan et al. (1999) noted its implication for

teachers. He explained that teachers must strive to reveal the preconceptions students bring to the classroom and understand how these perceptions influence current learning. Advocates of constructivism state that meaning is personal and unique and builds upon personal prior learning and experience, which differ from student to student. This implies that there is no one-way to learn something since a variety of tasks and experiences are required to meet individual need. We are living in pluralistic world; more flexibility must be built in the instruction. Not all students share the same learning goals, the same background knowledge and the same style of learning. Rather than ignoring these differences, instruction should accommodate them. According to Collins (1991), constructivism is a pluralistic approach, which considers multiple goals, styles and perspectives in instruction.

1.2 Statement of the Problem

Whether they are conscious of it or not teachers possess an individual philosophy of teaching and learning that guide their behavior and practices. In line with this idea, Brookfield (1995) states that our practice is informed by our implicit and informal theories and beliefs about the process and relationships of teaching.

As clearly indicated in the education and training policy document, one of the objectives of the policy is to develop the problem solving capacity of the student (ETP, 1994). In order to meet the objectives of the policy,

teachers need to create learners that are autonomous, inquisitive thinkers who question, investigate and reason. The learning process should foster deep understanding rather than rote memorization.

Learning in schools should be based on authentic genuine problem situations so that the value of using what is learned may be more strongly experienced. Constructivist learning is transferable. In constructivist classrooms, students create organizing principles that they can take with them to other learning setting.

Though the objective of the policy is to create individuals who are capable of solving societal problems, the current state of learning in schools is being criticized for giving 'inert' knowledge, which might be activated for a short while for the purpose of examination and tests.

In order to meet this objective, the classroom learning teaching practices and method of assessments are explicitly and implicitly indicated in the policy document. Now is the time for teachers to think and act differently. Their actions should be informed by newly emerging theory of constructivism. Furthermore, changes in societal structures, advances of technology and the knowledge explosion continue to demand a more literate and critical thinking population. In this regard, teachers must strive to stay informed with the new and emerging trends in teaching approaches and practices.

Researches have been conducted to examine the educational practices of schools in Addis Ababa. For instance, Temesgen (2001) found out that teacher lacked the necessary knowledge and skill to implement constructivist-teaching strategies in teaching science subjects in upper primary schools. And in another research, Mintesnot (2006) has reported that though there were attempts by the teachers to use constructivist-teaching strategies, there is a tendency to fall back to traditional methods of teaching.

The researcher from his long years of experience as a teacher had observed the negative impacts on education posed by traditional, teacher-dominated way of teaching and learning process. This tradition in school did not contribute much to the development of better learning. As Gagne (1985) pointed out, a traditional way of teaching which promotes direct transmission of knowledge to students begin to lose favor because of their inability to explain some important intellectual achievements such as creativity, decision making and problem solving activity. Schools should produce citizens who are capable of solving problems in real life situation. This conditions calls for a change in educational practices that occur in schools. In this regard, constructivist teaching learning approach will be of a paramount importance. A teacher who practices constructivist-teaching approach positively influences the learning process.

It is a common experience to see parents send their students to private schools. There are different and contradictory unfounded beliefs behind. This study is aimed to examine the current educational practices in schools. Examining educational practices in schools according to Anderson (2004) leads to improved practice.

“In order to substantially improve the quality of education that students receive, we must study what happens in the class rooms in which they receive their education. We need to know what teachers say when they explain different concepts to students. We need to know the activities the teachers use to involve their students in learning”

Because comparative study gives a better chance to see differences in the educational practices of schools, this study is intended to assess and compare the application of constructivist teaching strategies in government and private second cycle primary schools of Addis Ababa. Therefore the following research questions are formulated to be answered by the study

1. What is the perception and knowledge of teachers towards constructivist teaching-learning strategies? Are there noted differences in perception and knowledge between private and government second cycle primary school teachers?

2. To what extent constructivist teaching strategies are practiced by government and private second cycle primary school teachers? Are there noted differences between them?
3. What factors hinder the application of constructivist teaching strategies in government and private second cycle primary schools?

1.3. Objectives of the Study

The main objectives of the study are: -

- To assess and compare the perception and knowledge of teachers in the government and private second cycle primary schools towards constructivists teaching strategies.
- To assess and compare the applications of constructivist teaching strategies in the government and private second cycle primary school teachers.
- To identify factors, which hinder the application of constructivist teaching strategies in government and private second cycle primary schools.

1.4. Significance of the Study

The study is hoped to make the following contributions

1. It is hoped to give insight to the teachers about constructivist teaching strategies.
2. It may help teachers to reflect upon their teaching activities and make the necessary adjustment
3. It may give a picture of the existing constructivist educational practices in government and private second cycle primary schools.
4. It may help to take appropriate educational interventions in line with new trends in theory of learning and teaching and assessment.
5. It may serve as a springboard to researchers to conduct research on related issues.

1.5. Delimitations of the Study

The purpose of the study was to assess and compare constructivist teaching strategies in government and private second cycle schoolteachers. So the study is delimited to the second cycle primary government and private schools of Addis Ababa in two sub cities. Therefore the findings and recommendations could not be generalized to other places out side the areas of study.

1.6. Limitations of the Study

The study could have been more comprehensive and more valuable if it had included all types of primary schools and all cycles of primary schools in Addis Ababa but this was not possible because of time and financial constraints.

1.7. Definition of operational terms

Government primary schools: - are schools run under the responsibility of Addis Ababa regional government.

Private primary schools: - are schools, which are owned by private owners.

Constructivism: - is a learning theory that states learners construct knowledge based on prior knowledge, through active engagement in the learning process.

Traditional way of teaching: is a method of teaching where the teacher transmits knowledge to the students and students are passive receivers of knowledge.

1.8. Organization of the Study

The study is organized in five chapters; the first chapter is the introduction, which includes background, statement of the problem, the basic research questions, objectives of the study, significance of the

study, delimitations and limitations of the study, definition of operational terms and organization of the study.

The second chapter is review of the literature. The third chapter is methodology and the research design, which includes the population and sampling procedures, instruments and data collection procedures, and data analysis. The fourth chapter is presentation and analysis of data and the fifth chapter is about summary, conclusion, and recommendation.

Chapter Two

Review of the Related Literature

2.1. Constructivism as a theory of learning

As its name may imply, constructivism emphasizes the building or constructing process that occurs in people's mind in the process of learning. According to constructivists, knowledge and truth are constructed by people and do not exist outside the human mind (Duffy and Jonassen, 1991). This notion is in sharp contrast with the objectivist view, which asserts that knowledge and truth exist outside the mind of the individual and therefore are objective. Knowledge is considered as being separate from knowing and knower. Objectivists think of knowledge as being 'out there' residing in books independent of thinking being.

The role of education in objectivist view is to help the students learn about the real world. The real world knowledge found should be transmitted to the learner. Learning thus focuses on acquisition of set of skills and facts. Learners are told about the world and are expected to replicate its content and structure in their thinking (Jonassen, 1991). According to Jonassen (1991), learners are encouraged to view objects, events and phenomena with an objective mind, which is believed to be separate from cognitive process such as imagination, intuition, feelings, values and beliefs.

In support of this idea Kelly (1991), states that knowledge is an active rather than passive process. This is to say that an individual is involved actively in the process of making meaning. Learners therefore are not treated like their brains are blank slates to be written up on or empty vessels to be filled up. Fosnot (1996) defines constructivism from psychological point of view and says it is a psychological theory that construes learning as interpretive, recursive, building process by active learners interacting with physical and social world.

Constructivism is a theory of knowledge used to explain how we know what we know. The constructivist epistemology asserts that the only tools available to a knower are the senses. It is only through seeing, hearing, touching, smelling and tasting that an individual interacts with the environment. With these messages from the senses, the individual builds the picture of the world. Therefore constructivism asserts that knowledge resides in individual and construction of knowledge is personal. If we take these ideas to the classroom situation, we can argue that students make sense of what is taught by trying to fit it with his/her experience which means to their construction of knowledge. So it is unlikely for knowledge to be transmitted intact from the head of the teacher to the head of the students.

According to constructivist view of learning, knowledge is not a thing that can be simply given by the teacher at the front of the room to students sitting passively in their desk. Rather, learners through an active mental

process of development construct knowledge. Learners are the builders and creators of meaning and knowledge. Knowledge is a construction of how the world works; it is viable in the sense that it allows an individual to pursue particular goals.

If we take knowledge as being constructed by the learner, then two things must come to the forefront. Firstly, learners come to the learning situation with their prior knowledge gained from experience and this prior knowledge influences what new or modified knowledge they will construct from new learning experiences. The second point is that learning is active rather than passive. Learners confront their understanding in light of what they encounter in the new learning situation.

2.2. Faces of Constructivism

Depending on the emphasis researchers give to different components, constructivists could be named differently. In the following section, the broader ones are discussed. As Martin (1998) put it, the divisions are point of views, perspectives, loosely defined by particular individuals.

2.2.1. Cognitive Constructivism

Cognitive psychology has provided the basis for constructivist teaching (Piaget, 1971). Piaget was one of the early contributors to this theory. According to him, new experiences are received through existing knowledge through the processes of assimilation and accommodation.

Learners construct knowledge as they attempt to bring meaning to their experience.

According to Piaget (1977), learning occurs by an active construction of meaning rather than by passive recipience. When we, as learners encounter an experience or situation that conflicts with current way of thinking, a state of disequilibrium or imbalance is created. We must then alter our thinking to restore equilibrium or balance. To do this, we make sense of the new information by associating it with what we already know. We attempt to assimilate it in to our existing knowledge. When we are unable to do this we accommodate the new information to our old way of thinking by re-structuring our present knowledge to the higher level of thinking.

2.2.2. Social Constructivism

In this component of constructivism, the social aspect of knowledge construction is given emphasis. Learning is a social experience. We not only learn through making personal meaning for ourselves but also create shared meanings with others (Gagnon and Collay, 2001). Students discuss and bridge the gap between their understandings of knowledge. Through social interaction the shared meanings among the participants develop.

Social constructivists argue that the most optimal learning environment is the one where dynamic interaction between instructors, learners and

the task provide an opportunity for learners to create their own truth due to the interactions with others. In such kinds of learning, learners with different skills and background collaborate in order to arrive at a shared understanding of truth in a specific field (Duffy and Jonassen 1992).

Advocates of social constructivism believe that knowledge is a product of humans and is socially and culturally constructed. The importance of language as a means of communicating the knowledge is also given emphasis.

According to Vygotsky (1978), knowledge is constructed through practical activities on intrapersonal level while speech connects this meaning with interpersonal world shared by the child and his/her culture. Vygotsky is well known for his theory of zone of proximal development which is a distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. He has also explained the implications on educational practices through the process of 'scaffolding'. Learners can be extended beyond the limitations of physical maturation to the extent that the development process lags behind the learning process. This actually is different from Piaget's stages of development where the development comes first and accompanied by learning.

According to Vygotsky, instruction is good when it proceeds ahead of development. Learners should constantly be challenged with tasks that refer to skills and knowledge just beyond their current level of mastery.

Before teachers start teaching, they have to think of the how of learning of their students. Lindfors (1984) states this in clear and simple statements, as “how we teach should originate from how students learn”.

2.3. Constructivist Learning

Most of the time teachers talk of their plan as to how they teach the students. The process by which students learn is usually overlooked. Creating favorable learning atmosphere for students and helping them to learn is of vital importance in the learning process. There are certain constructivist principles, which teachers ought to follow in the constructivist classrooms. Students do not learn much when they sit in classrooms listening to the teachers teaching, memorizing facts and trying to spit out answers as they are given by the teachers. This is really a common experience, which we face in schools. Learning is considered as passive transmission of knowledge from the teacher to the student. The importance is given to reception rather than construction. As opposed to this view, the central idea of constructivism is that human learning is constructed. Learners build new knowledge upon the foundation of previous knowledge. They are the makers of meaning and

knowledge. Constructivist learning emphasizes the process of learning not the product and the importance is given to how one arrives at a particular solution. Appleble (1993) argues that rather than emphasizing characteristics of the final product, process oriented instruction that is constructivist instruction focuses on the processes in order to generate the products.

According to Savery and Duffy (2001), constructivism is defined as philosophical view on how we come to understand or know. They characterize constructivism in terms of three primary propositions, which explain the learning processes. The first proposition states that understanding is in our interactions with the environment. This is to mean that how we understand and what we understand about things are inseparable. What we understand is the function of content, the context, the activity of the learner and most importantly the goals of the learner. Since understanding is an individual construction, we cannot share understandings but rather we can test the degree to which our individual understandings are compatible. If knowledge is constructed in interaction with specific environment, then the nature of those environments should affect both the process of construction and the organization of the resulting process of construction and the organization of the resulting knowledge. A variety of experience cannot necessarily lead to the same understanding. In support of this idea, Fisher and Farar

(1987) argue that a skill is an attribute of a person in a context not of the person alone or the environment alone.

The second proposition according to Savery and Duffy, states that cognitive conflict or puzzlement is the stimulus for learning and determines the organization and nature of what is learned. Students learn new information best when it is linked to prior knowledge. The prior experience that learners bring to the classroom is important in the learning process. As can be seen from this argument, it is just like building a house. Building a house and learning need foundations.

If the experience, which the learner attends, does not fit to the beliefs and experience about the world, disequilibrium will be created which stimulates the learner to reevaluate existing beliefs. The learner then either assimilates it or accommodates it. Behind this view lies a constructivist tenet that learners use what they already know to filter and interpret new information. In effect, this means that learners construct their understanding rather than reproduce the teachers understanding. I think this is one big point where teachers in traditional classrooms fail to see. In constructivist classroom assessing students prior knowledge is a proper entry point for instruction.

The third proposition according to Savery and Duffy, states that knowledge evolves through social negotiation and through the evaluation of the viability of individual understanding. This idea is also

strengthened by (Derry, 1999). He emphasizes the contributions of dynamic interaction between teachers, learners to create an opportunity for optimal learning. Learners will create their own truth. People often have different views of a situation. If these views seem incompatible, there is a need for reconciliation, which can lead to the social mediation of individual knowledge. Through discussion or arguments, the participants negotiate new positions which lead to shared meanings development. It involves making an effort to listen and understand other perspectives and as a result common or taken as shared meanings develop in a classroom. Negotiation is an important aspect of constructivist classroom because it unites teachers and students in a common purpose. It gives a chance for students to learn and appreciate the experiences and the contributions of people from different background. As noted by VanGlasserfeld (1989), other people are the greatest source of alternative views to challenge our current views and hence serve as a source of puzzlement that stimulate new learning. Resnick (1987) also argues that concepts that we call knowledge do not represent some ultimate truth but are simply the most viable interpretation of our experiential world.

2.3.1. Principles of Constructivist Learning

When we start to think about learning, we might ask what are the learning principles that are in consistent with constructivist thinking.

Hein (1991) presents the following major principles. The first principle is that learning is an active process in which the learner uses sensory input and constructs meaning out of it. Hein also describes meaning making as a process that takes place in the mind. He argues that along with hands on activities, mind on activities are also equally important. We need to provide activities, which engage the mind as well as the hands. Though physical involvement is necessary condition for learning, the activities should also be mind-on. Learners should be provided things to think about.

Another principle stated by Hein (1991) is that learning is a social activity. Our learning is intimately associated with our connection with other human beings, our peers, teachers and our family. It is not possible to isolate learners from social interactions and expect learning to occur. In line with this idea, Cobb (1996) argues that both individual knowledge construction and enculturation occur when learning a body of knowledge is located in a community. According to him, the socio-cultural and constructivist perspectives each constitute the back ground for the other. In a similar manner, Fosnot (1996) states that socio-cultural and individual constructivist process is interwoven, because individuals do not act alone. They are social beings and as such, interact with others to construct mutually shared knowledge and meaning. Constructivists believe that learning is contextual. This is to mean that we do not learn isolated facts and theories separated from the rest of our

lives. We learn in relation to what else we know, what we believe. Put in simple ways, learning is active and social. We cannot divorce our learning from our lives.

There is a consensus among constructivists that students learn more effectively when they already know something about the content area and concepts in that area mean something to them and their particular background or culture. When teachers link new information to the students' prior knowledge, they activate the students' interest and curiosity. It is plain clear that any effort to teach must be connected to the state of the learner that is his/her previous knowledge.

Constructivist also argues that learning takes time, it is not instantaneous. In order for significant learning to occur, we need to revisit ideas and time is needed to reflect his/her idea. In line with this idea, Kauchak and Eggen (2003) argue that giving student time to think about their answers increases the quality of student responses significantly.

2.3.2. Learning Environment

2.3.2.1. Authentic learning

Allows students to explore, discover, discuss and meaningfully construct concepts and relationships in context that involve real world problems and projects that are relevant and interesting to the learner. Authentic learning implies that learning be centered around authentic tasks.

Learning is guided with teacher scaffolding. This type of environment creates opportunities for students to have social discourse and to be engaged in exploration and inquiry.

2.3.2.2. Self-directed learning

In this kind of learning, the individuals take the initiatives, with or without the help of others, formulate learning goals. In addition to this learners identify resources for learning and select and implement learning strategies and evaluate learning outcomes. Whether or not learning is self directed depends not on the subject matter to be learned or the instructional method used. Instead self-directedness depends on who is in charge, who decides what will be learned and what method and resource should be used and how to success of the effort should be measured. To the extent the learner makes those decisions, the learning is generally considered to be self directed.

2.3.2.3 Situated Learning

Researchers view situated learning as a method of ensuring students learning of concepts anchored with in the context of the area of study (Brown, Collins and Duguid, 1989). Situations co-produce knowledge through activity. This is to mean that learning is context dependent.

Anderson, Reder and Simon (1996) explain the four major premises guiding the development of classroom activities.

1. Learning is grounded in the actions of every day situations
2. Knowledge is acquired situationally and transferred only to similar situations.
3. Learning is the result of social process
4. Learning is not separated from the world of actions but exists in robust, complex social environment made up of actors, actions and situations.

2.3.2.4. Cooperative learning

This is a popular teaching strategy. This strategy transforms classrooms into meaningful, student-centered learning resulting in a social and intellectual development. It also has a positive influence on achievement and attitudes to learner-centered. Both teachers and students are collectively responsible for the learning process.

2.4. Constructivist teaching

As discussed in earlier sections, how we perceive knowledge and the process of coming to know provide the basis for educational practice. In other words, our Epistemological stance on knowledge determines the practices in schools.

Constructivist teaching emphasizes thinking, understanding, reasoning and applying knowledge. It encourages learners to construct their own knowledge rather than reproduce someone's knowledge. The role of the

teacher is radically changed. He is no more transmitter of knowledge but the facilitator of learning (Chailee and Britain 1991). Our belief about teaching and learning has a profound effect on our daily educational practices. The lens with which we view learning process matters most because it guides our action. If we accept constructivist position, we are inevitably required to follow a pedagogy, which argues that we must provide learners with the opportunity to interact with sensory data and construct their own world. Constructivists believe that people learn by making their own sense of the world rather than by acquiring fixed knowledge that already exists.

2.4.1. Constructivist Instructional Principles

There are certain common instructional principles, which go in harmony with constructivism. Savery and Duffy (2001) discussed the major ones. According to these researchers, anchoring learning activities to a larger task or problem is important one. Learning is a purposeful activity. We all have purpose in our learning. We learn in order to be able function more effectively in our world. The learner should accept the relevance of the learning activity to the larger task of learning. In support of this idea Lebow (1993) adds the importance of embedding the reasons for learning into the learning activity itself. Brooks and Brooks (1993) also supported the idea of building lessons around primary concepts and 'big' idea. Giving learners ownership of the learning process is another important principle. This is done by letting students find a solution of the problem

by themselves In this case learners not only own the process of solving the problem but also the problem it self. By respecting the ideas of learners and by encouraging independent thinking, it is possible to help learners attain their own intellectual identity. Learners who frame questions and issues and then go about analyzing and answering them take responsibility for their own learning and become problem solver. In traditional classrooms, teachers usually present the problem to the learners and dictate the procedures that should be followed. This hinders self-directed learning. Teaches role should be to challenge the learners thinking not to dictate or attempt to proceduralize that thinking.

The learning environment should reflect the complexity of the environment in which learners function at the end of the learning. This principle emphasizes the need to challenge learners thinking. Rather than simplifying the environment for the learner, we allow the learner to work in a challenging environment.

Decontextualized knowledge which does not consider the environmental situation of learning does not give learners the skill to apply their understandings to authentic tasks. This is because we do not know how and when to use the concepts. Brown et al (1989) explain the importance of content, context and collaboration in the process of learning. In line with the above argument, Caine and Caine (1991) explain the importance of challenging environment in the process of learning by stating that learning is enhanced by challenge and inhibited by threat.

Encouraging testing ideas against alternative views and alternative contexts is also important principle. Driver and Esley (1978) argue that alternative conceptions have their Source in each individual student's complex experiential history, including direct observation of the world, peer culture and language. Therefore, each individual has unique history and holds set of alternative conceptions that is different from other students. Constructivists generally agree that knowledge is socially negotiated. The quality or depth of ones understanding can only be determined in a social environment. Here we can see if our understanding can accommodate the issues and views of others and to see if there are points of view, which we could usefully incorporate into our understanding. The importance of a learning community where ideas are discussed and understanding is enriched is critical to the design of an effective learning environment. In line with this, the use of collaborative learning as a strategy to achieve this learning community is important. Collaborative learning emphasizes the need to examine an issue from different angles and give students the understanding of various points of views. If they have the chance to present what they think and hear others' ideas, learners can build personal knowledge base that they understand. It is only when they feel comfortable enough to express their ideas will meaningful classroom dialogue occurs. The dialogue that results from this combined effort provides learners with the opportunities to test and refine their understanding in an ongoing

process. VonGlaserfeld (1988), elaborates the social construction of knowledge. According to him, concepts are developed in a process of fine-tuning which involves the interaction with others. Group interaction aids this process because it exposes the learner to multiple perspectives about a theme.

Another important principle in line with constructivist teaching is the provision of opportunity to support reflection on both the content learned and the learning process. Reflection offers students and teachers opportunities to think critically about the learning process. It refers to understanding that one knows and requires activities that ask students to look back at what they have learned. Teachers should model reflective thinking throughout the learning process and support the learners in reflecting on the strategies for learning as well as what was learned (Schon, 1987).

2.4.2. Constructive classroom environment

In constructivist classroom the learner is at the center of the learning process. Learners will be empowered to take responsibility for their own learning, this situation is student centered. According to Temechegn (2002), The learner has full responsibility for his/her own learning. The design of the environment is meant to stimulate and hence engage the learner in the problem solving activities. The teacher will assume the role of facilitator and gives up the role of 'expert'. The teacher questions the

students to check the how and what of learning. His duties will be watching, listening and asking question. The teacher provides students with experiences that allow them to hypothesize, predict, manipulate objects, pose question, investigate and invent. Students, on the other hand will come to understand that a given question or problem could be considered from different angles (perspectives) so multiple answers are possible. They will be challenged to defend their thinking. They develop hypothesis and test their knowledge by presenting it and working on with others. They will also begin to take an active part in their own assessment of their knowledge and in the assessment of the learning situation. In line with the above argument, Richardson (2003) defined constructivist pedagogy as a creation of classroom environment, activities and methods that are grounded in the constructivist theory of learning. He further elaborates constructivist pedagogy practices as comprising the following characteristics.

- Attention to the individual and respect for students' background, and developing understanding of and beliefs about elements of the student-centered approach.
- Facilitation of group dialogue that explores an element of the domain with the purpose of leading to the creation of shared understanding of a topic. This includes planned or unplanned introduction of formal domain knowledge into the conversation.

- Provision of opportunities for students to determine, challenges, change or add to existing beliefs and understanding through engagement in tasks that are structured for this purpose.
- Development of students' metawareness of their own understanding and learning process, (Richardson, 2003).

Classrooms in which instructional strategies compatible with constructivist approach may slightly differ. However, the following points are common. The first one is that learning and development are social, collaborative activity. Another point worth to mention is that school learning should occur in a meaningful context and not be separated from learning and knowledge learners develop in the real world. This off course is vital for relating out of school experience to the learners school experience.

Constructivist classroom environment differs from its traditional counterparts in a number of ways. Comb (1976) for instance explains this supportive and effective learning environment in the following ways. According to him, the atmosphere should facilitate the exploration of meaning. Learners feel safe and accepted. The classroom provides environment, interaction and socialization. In addition to this, learners must be given frequent opportunities to confront new information and experiences in search for meaning. They must be allowed to confront new challenges using past experience without the dominance of the teacher.

Many researches indicate cooperative learning which is a typical feature of constructivist classroom create better relations among different ethnic groups, increases self-esteem, increases willingness to help others and leads to a greater acceptance of others. These skills are very important in helping students to succeed in the real world (Slavin, 1995). Moreover they should be developed while students are in school.

In constructivist classroom, unlike the traditional ones, the teacher and the student share responsibility and decision-making and demonstrate mutual respect. This democratic environment makes learners autonomous. In addition to this, in constructivist classroom students' work primarily in groups and learning and knowledge are interactive and dynamic. There is a great focus and emphasis on social and communication skills as well as collaboration and exchange of ideas. This of course is contrary to traditional classrooms in which students work primarily alone, learning is achieved through repetition and the subject are strictly adhered to and are guided by textbook. According to Good and Brophy (1994), successful teachers in such classrooms provide supportive environment that is a safe, effective learning community with flexibility, and commitment to effective and meaningful learning that is student centered, constructivist and social in form and dynamic in nature.

2.4.3. Constructivist Teacher

The teacher acts as a facilitator posing problems and monitoring student exploration, facilitates the direction of inquiry taken by the learner and promotes new patterns of thinking. He/she draws upon a variety of resources including raw and unprocessed data, primary sources of information, provides rich experience for learners. He rejects the common practice of telling students what to think and how to think in steady. Constructivist teacher creates a context for learning in which students can become engaged in interesting activities that encourage and facilitates learning. He guides students as they approach problems, encourages them to work in groups to think about issues and questions. Provides encouragement and advice as they tackle the problems, challenges that are rooted in real life situations that are both interesting to the students and satisfying in terms of the result of their work.

In line with this idea, Copley (1992) states that constructivism requires a teacher who acts as a facilitator whose main function is to help student become active participant in their learning and meaningful connections between prior knowledge, new knowledge and the process involved in learning. Similarly V. Glasserfeld (1995), elaborates this by stating that the teacher acts as a "mid wife" in the birth of understanding.

2.5. Constructivist Assessment

Since teaching and learning process are seen in a new way and the focus shifts from the teacher to the student, we expect the assessment techniques also to be different from the usual traditional assessment. The assessment and learning process are seen as linked and not separate ones. The assessment is considered as interactive and continuous. It should not be intimidating process that causes anxiety in the learner. But, rather supportive process that encourages the need to be evaluated. In constructivist teaching and learning process, the process of gaining knowledge is viewed as being just as important as the product. Thus, the assessment is based not only on tests but also on observation of student's work and students' point of view. Researchers like Jonassen (1991), argues that evaluating how learners go about constructing their knowledge is more important than the resulting product.

Some assessment strategies include; Oral discussion, the teacher presents students with 'focus' questions and allows an open discussion on the topic, in the mean time he observes the process. Another assessment technique that could be used is KWLH chart, what we know, what we want to know, what we have learned and how we know it. These techniques can be used throughout the course of study for a particular

topic but is also good assessment technique as it shows the teacher the progress of student throughout the course of study.

Mind Mapping: - in this activity students list and categorize the concept and ideas relating to a topic. They are also known as graphic organizers. A graphic organizers are an instructional tool used to illustrate students prior knowledge. They are also used to describe stages of phenomena, show timelines for historical events, describe central idea, show the interactions of events. In constructive assessment, portfolio has greater importance. It is representative collection of an individual students work. Students show their knowledge, skills in a variety of different way apart from examinations.

Chapter Three

Research Design and methodology

The main intention of this study was to assess and compare the implementation of constructivist teaching strategies in government and private second cycle primary schools of Addis Ababa. In order to meet the objectives of the study, comparative descriptive design was employed as an appropriate method. Qualitative and quantitative data were collected through questionnaire, observation and interviews and the data were analyzed using comparative analysis.

3.1 Population and Sampling

The target populations in the study were second cycle primary school teachers in Addis Ababa. According to statistical abstract of Addis Ababa Education bureau of 1999, there are 240 private and 94 government second cycle primary schools in the ten sub cities.

Simple random sampling was employed to select two sub cities from the population. The selected sub cities were Nefas silk lafto and Kirkos sub city.

In Kirkos sub city there are 8 government and 10 private primary schools, which includes the second cycle. Out of the 8 government primary schools, 2 schools namely Temenjazyaz and Worha yekatit primary schools were selected by simple random sampling method.

Among the 10 private schools, 3 schools were selected by simple random sampling. They were Blue bird, Abey ababa and Future talent Primary schools.

Similar procedures were followed to select sample schools from Lafto Subcity. Out of 8 government schools 2 schools were selected randomly. Fit/Lake Adgeh and Lafto Primary schools were samples. Out of 20 private schools, 4 schools, kids flower, Grace, Falcon and Kibua Primary schools were selected by simple random sampling method. Taken together 4 government and 7 private primary schools were the samples of the study. Regarding the teachers, there were 121 government and 126 private second cycle primary school teachers. All of them were the participants of the study.

3.2. Instruments and data collection procedures

Since qualitative and quantitative data were needed in the study, different instruments were developed and used to collect data. Observations, questionnaire and interviews were employed. Regarding the questionnaire, it was distributed to 25 teachers as a pilot test. Up on return, Cronbach alpha reliability estimate coefficient was determined [0.751] using SPSS computer program.

3.2.1. Observation

In order to collect the required data from classroom teaching practices and from the school as a whole, observations were conducted.

Observation rating scales were prepared. It consisted of 10 items. These items were adapted from Elisabeth Murphy (1997) with some modifications. It consists of 4-point scales, very well applied, moderately applied, not applied and not applicable with values of 4,3,2,1, respectively. It was planned to observe 30 teachers at the beginning but due to time constraints, examination schedules of the schools, 24 observations were conducted. 6 teachers from private and 6 teachers from government schools were observed while they were teaching. Each of the selected teachers was observed twice. Observed teachers and grade level and sections were selected on the bases of stratified sampling. Dates and periods were negotiated and arranged with the teachers before the observations were made. The researcher spent the whole one period with in the classroom with out participating in the process. The researcher checked and identified the presence of constructivist teaching strategies and rate their application accordingly.

3.2.2. The questionnaire

The questionnaire has five sections with 45 items. The first section deals with the background information of the respondents. The second section deals with the perception of constructivist teacher's approaches of the respondents. It consisted of five point scales with strongly agree, agree, undecided, disagree and strongly disagree with values of 5,4,3,2,1, respectively. The third section is concerned with how frequently teachers employ the constructivist teaching strategies in their daily teaching

activities. This section again consists of 4-point scales, always, often, sometimes and never with values of 4,3,2, and 1 respectively. The fourth section of the questionnaire is about factors, which hamper constructivist-teaching practices in schools. Some hindering factors were outlined against 4 point scales as most serious, serious, not serious and not applicable with values of 4,3,2,1 respectively. And lastly, open-ended item was also included to give the respondents a chance to express their ideas regarding the issue. The fifth part of the questionnaire contains open-ended questions, which are aimed to elicit ideas from the respondents regarding their teaching practices.

3.2.3. Interviews

The interviews were conducted with department heads. The interview items were unstructured and meant to enrich the data gathered by other instruments. The data were analyzed integratively with data gathered through observation and questionnaire.

Since most of the departments in many schools were organized as science department, social science and language departments. The heads of the departments were selected on the basis of stratified sampling and interviews were conducted with them. A total of 6 heads were interviewed from private and government primary schools.

3.3. Data analysis

The quantitative data were categorized in groups; their mean and percentage were determined and used for comparative analysis. The qualitative data were organized summarized and interpreted in line with the research questions.

Chapter Four

Presentation and Analysis of Data

This chapter deals with analysis and interpretation of data gathered from participant teachers through questionnaire, observation and interviews. The data were analyzed in relation to the research question formulated in the first chapter.

The qualitative data were organized, summarized and interpreted in line with the research questions that were set in the first chapter. The quantitative data were categorized and their mean and percentage were used for analysis purpose. And hence, the perception of government and private second cycle primary school teachers towards constructivist strategies, the basic knowledge and skill in constructivist teaching process and factors which hinder them from applying constructive strategies are the main focuses of the analysis.

4.1. Background Information of the Respondents

The participants of the study were teachers in second cycle government and private primary schools. In addition to this data were obtained from the participants through interviews, questionnaire and observation of the classrooms and the school setting as a whole. The sex, age and teaching load and qualification of the respondents are presented as follows: -

Table 1 Description of respondents by sex and age

No	Item	Government Primary School teachers						Private primary school teachers					
		M		F		T		M		F		T	
		F	%	F	%	F	%	F	%	F	%	F	%
1	Sex	68	56.2%	53	43.8	121	100	103	81.7	23	18.3	126	100
2	Age												
	20-25	25	20.6	22	18.2	47	38.8	55	43.7	18	14.3	73	58
	26-30	17	14	14	11.6	31	25.6	28	22.2	4	3.2	32	25.4
	31-35	10	8.3	6	5	16	13.2	11	8.7	1	0.8	12	9.5
	39-40	12	9.9	11	9.1	23	19	9	7.1	-	-	9	7.1
	41-45	4	3.3	-	-	4	3.3	-	-	-	-	-	-
	46-50	-	-	-	-	-	-	-	-	-	-	-	-
	Total	68	56.1	53	43.9	121	100	103	81.7	23	18.3	126	100

As it is indicated in table 1 item 1, the number of female teachers in government primary schools is 53 (43.8%), whereas female teachers in private primary schools is 23 (18.3%). The number of male teachers in government primary schools is 68 (56.2%) where as it is 103 (81.7%) in private schools. From this it can be clearly seen that the number of female teachers in private schools is very low compared to the government schools. The private primary schools are dominated by male teachers. The government primary schools work in line with the intention

of education training policy. They promote the participation of women in the education sector.

In table 1, the data shows the age group of the respondents 3(64.4%) of the government and 105(83.4%) of the private teachers are between the age of 20-30. The data clearly shows that, the young generation teachers dominate the second cycle primary schools. It also show that the proportion of younger generation in private schools in relatively higher.

Table 2. Frequency Distribution of Teachers by Qualification, work experience and Teaching load per week

No	Item	Government Primary School teachers						Private primary school teachers					
		M		F		T		M		F		T	
		F	%	F	%	F	%	F	%	F	%	F	%
1	Qualification												
	Certificate	4	3.3	5	4.1	9	7.4	4	3.17	1	0.8	5	3.9
	Diploma	64	52.9	48	39.7	112	92.6	69	54.8	16	12.7	85	67.5
	Degree	-	-	-	-			30	23.8	6	4.76	36	28.6
	Total	68	56.2	53	43.8	121	100	103	81.7	23	18.3	126	100
2	Work experience in years												
	1-5	39	32.2	22	18.2	61	50.4	71	56.3	18	14.3	89	70.6
	6-10	12	9.9	18	14.9	30	24.8	18	14.3	4	3.2	22	17.5
	11-15	6	5	7	5.7	13	10.7	14	11.1	1	0.8	15	11.9
	16-20	2	1.7	4	3.3	6	5	-	-	-	-		
	21-25	9	7.4	2	1.7	11	9.1	-	-	-	-		
	26-30	-	-	-	-	-		-	-	-	-		
	Total	68	56.2	53	43.8	121		103	81.7	23	18.3	126	100
3	Teaching load per week												
	5-10	4	3.3	-	-	4	3.3		-	-	-		
	11-15	24	19.8	30	24.8	54	44.6	-	-	-	-	-	
	16-20	32	26.4	16	13.2	48	39.6	10	7.9	4	3.2	14	11.1
	21-25	8	6.6	7	5.8	15	12.4	31	24.6	7	5.5	38	30.1
	26-30	-	-	-	-	-	-	62	49.2	12	9.5	74	58.7
	Total	68	56.1	53	43.8	121	100	103	81.7	23	18.2	126	100

Table 2 item 1 displays the qualification of teachers. nearly all teachers fulfill the requirement of qualification. Only 9 (7.4%) of government and 5

(3.9%) of private teachers are under qualified (certificate level). The second cycle teachers are expected to have diploma. Similarly, the great majority of government (83.1%) and private (88.1%) teachers have a work experience of 1-10 years. the data shows that teachers lack experience in teaching. Teachers who have lower years of experience may have a problem in implementing the curriculum.

Considering table 2 item 3, 4 (3.3%) of the government teachers have 10 periods per week. 54(44.6%) of the teachers have a load of 11-15 and 48(39.6%) of them have 16-20 periods per week. Only 15(12.4%) of them have a maximum period load of 21-25. This table also depicts 14(11.1%) the private school teachers have periods between 16-20. 38(30.1%) of the teachers teach between 21-25 periods and 74(58.7%) of the teachers are loaded with periods between 26-30. As indicated clearly in the table, the private school teachers are loaded with more periods as compared to the government schoolteachers. There is no private school teacher who teaches less than 15 periods per week. The majority of them 112 (88.8%) teach more number of periods that ranges between 21-30. This higher teaching load might have negative impact on implementation of constructivist teaching strategies. The data obtained from interview strengthen this point. Teaching 30 periods per week is tiresome and difficult therefore there is no time to consider students interest. Teachers usually rush to cover the chapters. The data obtained from observation also confirmed this condition.

4.2. Teachers' perception of constructivist teaching strategies

Table 3. Frequency distribution of teachers' perception of constructivist teaching strategies

No	Item	Private Teachers									Government Teachers								
		Agree		Undecided.		Disagree.		Total		Mean	Agree		Undecided.		Disagree.		Total		Mean
		F	%	F	%	F	%	F	%		F	%	F	%	F	%	F	%	
1	Students come to class with prior knowledge	114	90.	4	3.2	8	6.4	126	100	4.2	77	63.6	15	12.4	29	24	24	121	3.7
2	Learners are not passive receivers of information but active constructors of knowledge and meaning	101	80.2	21	16.7	4	3.2	126	100	4.42	96	79.3	12	10	13	10.7	121	100	4.43
3	Student centered classroom environment facilitates learning	118	93.7	4	3.2	4	3.2	126	100	4.7	121	100	-	-	-	-	121	100	4.9
4	Learning is understanding of concepts than memorizing it	119	94.4	-	-	7	5.6	126	100	4.7	106	87.6	5	4.1	10	8.3	121	100	4.6
5	Students should be involved in problem solving activities	109	86.5	13	10.3	4	3.2	126	100	4.31	106	87.6	5	4.1	10	8.3	121	100	4.26
6	The teacher is a facilitator a coach and a guide	126	100	-	-	-	-	126	100	4.95	121	100	-	-	-	-	121	100	4.83

7	Learning is contextual occurs in meaningful activity and authentic contexts	117	92.9	9	7	-	-	126	100	4.3	92	76	19	15.7	10	8.2	121	100	4.01
8	Learning is facilitated by social interaction	114	90.5	8	6.3	4	3.2	126	100	4.43	111	91.7	5	4.1	5	4.1	121	100	4.42
9	Learners should be engaged in open ended activities	75	59.5	22	17.5	29	33	126	100	3.48	82	67.3	24	19.8	15	12.4	121	100	3.82
10	Learning environment should be democratic students are involved in decision making	113	89.6	13	10.3	-	-	126	100	4.55	100	82.6	14	11.6	7	5.8	121	100	4.42
11	Students should be provided with activities which are slightly higher than their ability	74	58.7	19	15.1	33	26.2	126	100	3.48	67	55.3	29	24	25	20.7	121	100	3.47
12	Students have ownership and voice on the learning process	118	83.6	8	6.4	-	-	126	100	4.3	101	83.5	9	7.4	11	9.1	121	100	4.02
13	Multiple perspective and representation of concepts should be encouraged.	11.7	92.8	9	7.1	-	-	126	100	4.48	116	95.8	5	4.1	-	-	121	100	4.7
14	Assessment should be continuous and integral part of teaching.	122	96.9	4	3.1	-	-	126	100	4.84	111	91.7	10	8.3	-	-	121	100	4.77

As indicated in table 3 item 1, 114(90.4%) of the respondents believed that students come to class with a wealth of prior knowledge and 8(6.4%) of them do not agree with this notion. 4(3.2.%) of them were unable to decide on this item. With regard to this item, 77(63.6%) of the government teachers believed that students come to class with their prior knowledge. In contrary to this, 29(24%) did not agree with this item and 15(12.4%) of the teachers did not decide on this item. though the majority of private and government teachers believed that students come to class with their prior knowledge, there is a better perception of this item among private school teachers.

Assessing prior knowledge enables teachers to design effective instructional strategies by making classroom facts relevant to students personal experiences. In line with this argument, Edmondson and Novak (1993) argued that meaningful learning occurs when new information is linked with existing concepts and integrated into what the learner already understands.

In table 3 Item 2, the data shows that 101 (80.2%) of the private teachers agreed that learners are active constructors of knowledge. 4(3.2.%) of them did not agree with this item and 21 (16.9%) of them could not decide whether students are passive receivers or active constructors of knowledge. 96(79.3%) of government teachers believed that students are active constructors of knowledge 13(10.7%) of them did not agree with this item and 12(10%) of them were unable to decide whether students

are passive receivers or active constructors of knowledge. The data revealed that the majority of teachers in private and government primary schools believed in knowledge as being constructed in classroom. Since teachers' action is informed by their belief about learning and knowledge, their perception could be considered as a fertile ground for constructivist teaching to flourish.

In table 3 item 3, the data show how teachers respond to student centered classroom environment. 121(100%) of government and 118(93.%) of private teachers reacted the same way. They believed that students centered classroom environment facilitates learning. Contrary to this, only 4(3.2%) of private teachers disagreed on this issue and 4(3.2%) were unable to decide on this issue.

As constructivist teaching learning approach is student-centered approach, the perception of teachers towards this provides a better ground for teachers to implement constructivist-teaching strategies. So it is possible to conclude that the great majority of teachers in second cycle private and government primary schools implement the curriculum with a belief that student centered teaching approach is of a paramount importance.

In table 3, for item 4 and 5, large proportion of teachers in both private and government schools showed their agreement. 119(97.7%) and 109(86.5%) of private teachers and 109(90.1%) and 106(87.6) of the

government school teachers agreed that learning is understanding of concepts than memorizing it (item 4) and students should be involved in problem solving activity (item 5). 5(4.1.%) of the government school teachers did not agree with item 4.

Learning is a search for meaning. Memorizing facts without relating it to real life situations will not make a student focuses on deep understanding of concepts. From this argument it is possible to conclude that a great majority of government and private second cycle teachers believe in deep understanding of concepts and problem solving activities of students in learning process. This belief of course is in line with the intention of the education and training policy.

All government and private school teachers agreed that the teacher is a facilitator, coach and a guide. In constructivist teaching learning approach, the role of teachers and students are radically changed.

According to Rhodes and Bellmy (1999), a teacher tells, a facilitator asks, a teacher asks from the front, a facilitator supports from the back, a teacher gives answer according to a set of curriculum, a facilitator provides a guide line and creates the environment for the learner to arrive at his or her conclusion; a teacher mostly gives a monologue, a facilitator is in continues dialogue with the learners.

The goal of constructivism is to support students become critical thinker. This can be achieved by assuming multiple roles such as consultant and

coach. Based up on the responses revealed in the data, it is possible to conclude that the perception of Authoritarian approach towards teaching has gradually faded away. All teachers agree that a teacher is not the only "expert" rather he is a guide, a facilitator of learning.

The data in table 3 Item 7, indicates that 117(92.9%) of private teachers and 92(76%) of government school teachers believed that learning is contextual and occurs in meaningful authentic contexts. 9(7.1%) of private and 19(15.7%) of government schoolteachers were unable to decide on this item and 10(8.2%) of government teachers disagreed on this item.

In meaningful authentic context, the students will be provoked and inspired to learn more. Learning in environment that creates interest and relevance to their needs will be pleasurable for students. So it is possible to conclude that the majority of teachers believed that learning is contextual. They believed that the environment where the learning takes place is important in the learning process.

114(90.5%) private teachers and 111 (91.7%) of government teachers agreed on the importance of social interaction for learning (item 8). 8 (6.3%) private and 5(4.1%) of government school teachers did not agree with the item. The data discloses that the great majority of private and government schoolteachers believe that learning is facilitated by social interaction.

According to Fosnot (1996), the socio cultural and individual constructivist processes are interwoven because individuals do not act alone. They are social beings and interact with others to construct mutually shared knowledge and meaning.

As indicated in table 3 item 9&11, 75 (59.5%) private school teachers and 82 (67.6%) of government school teachers believed that learners should be engaged in open ended activities.

In contrast to this, 29 (23%) of private and 15 (12.4%) of government schoolteachers did not agree with this item. 22 (17.5%) private and 24(19.8%) government teachers were not able to decide on this issue. Similarly, 74 (58.7) private teachers and 67 (55.3) government teachers believed that students should be provided with activities, which are slightly higher than their ability. Contrary to this, 39(31%) of private and 25 (20.7%) of government school teachers disagreed on item 11. a significant number of teachers 13 (10.3%) of private and 29 (24%) of government school teachers were unable to decide on this item. Here also, the majority of teachers believe in challenging students for better learning to occur. Challenge enables students to reach beyond factual response. As Caine and Caine (1991) put it, challenge enhances and threat inhibits learning.

As indicated in Item 10 and 12, 113 (89.6%) of private and 100 (82.6%) of government schoolteachers believed in democratic learning

environment and in the involvement of students in decision-making process. 7 (5.8%) government schoolteachers did not agree on this item. 13 (10.3%) of private, 14 (11.6%) of government teachers were unable to decide on this item.

Further more, the great majority of government and private school teachers believed that learning should take place in democratic situations and students should participate in decision-making process.

Similarly the data in table 3 item 12 revealed that 118 (83.6%) of private and 101 (83.5%) of governments schoolteachers agreed that students should be empowered ownership in the learning process. This belief is in consistent with constructivist teaching learning principles. So it is possible to conclude that government and private second cycle primary school teachers believed in democratic learning environment and the empowerment of students in the learning process.

The data indicated in table 3 item 13, revealed that 117 (92.8%) of private and 116 (95.8%) of government teachers believed that multiple perspective and representation of concepts encourages learning. 9 (7.1%) of private and 5(4.1%) of government school teachers were not sure about this item.

From the data, it is evident that the great majority of teachers in both government and private primary schools believed that each student with different background and experience would have his own knowledge with

different perspectives. There are many ways of interpreting or understanding the world. This belief has a positive influence on learning.

As indicated in Item 14, 122(96.9%) of private and 111(91.7%) of government school teachers believed that assessment should be continuous and integral part of teaching 4(3.1%) of private and 10(8.3%) of government school teachers could not decide on this issue.

It is possible to conclude from the data that the great majority of private and government teachers believe in continuous assessment.

Generally, the perception of government and private second cycle primary school teachers towards constructivist teaching strategies is higher and it can serve as a fertile ground for the implementation.

4.3. Implementation of constructivist strategies

Table 4. Teachers performance of constructivist strategies as judged by themselves

No	Item	Private school teachers								Mean	Government school								mean
		Always		Often		Rarely		Never			Always		Often		Rarely		Never		
		F	%	F	%	F	%	F	%		F	%	F	%	F	%	F	%	
1	I assess students prior knowledge	25	19.8	67	53.2	34	27	-	-	2.92	12.4	10.4	74	61.2	32	26.4	-	-	2.85
2	I respect and accept students' different point of views	80	63.5	46	36.5			-	-	3.63	92	76	29	24			-	-	3.76
3	I help them connect the previous lesson with the current	101	80.2	21	16.7	4	3.2	-	-	3.76	101	83.4	15	17.3	5	4.1	-	-	3.79
4	I engage my students in-group activities. I encourage cooperative learning	11	8.7	43	34.2	72	57.7	-	-	2.51	15	12.4	39	32.2	67	55.4	-	-	2.57
5	I structure the lesson on relevant authentic and meaningful activities	20	15.8	32	25.3	74	58.7	-	-	2.57	14	11.6	37	30.6	70	57.8	-	-	2.53
6	I challenge their thinking by asking them open ended questions and give them wait time for their response	31	24.6	50	39.7	45	35.7	-	-	2.88	18	14.9	63	52	40	33.1	-	-	2.81
7	I encourage them to engage in dialogue with me as well as with their peers	20	15.8	51	40.5	55	43.6	-	-	2.72	8	6.6	39	32.2	74	61.2	-	-	2.45
8	I involve my students in decision making processes such as controlling class discipline	32	25.4	50	39.7	44	34.9	-	-	2.9	21	17.3	55	45.5	45	37.1	-	-	2.8
9	My assessment is continuous and integral part of teaching learning process I use portfolios, observation	21	16.7	41	32.5	64	50.8	-	-	2.95	16	13.2	40	33	65	53.7	-	-	2.59

As indicated in table 4 item 1, the private teachers responded, 25(19.8%) always, 67(53.2%) often and 34(26.9%) rarely, and the government teachers, 15(12.4%) always, 74 (61.21%)often and 32(26.4%) rarely. Although a large percentage of teachers assess students' prior knowledge on always and often basis, significant number of teachers perform this activity on rare occasions. Further more the mean values of private and government teachers (2.92 and 2.85) indicate that the performance is below 3(often).

As can be seen from the table, item 2 is the most frequently used strategy both by government and private teachers. Since each student is unique on his own, accepting and respecting students point of view is of a paramount importance to the process of learning.

Item 3 is about connecting the previous lesson with the current one. The private teachers response is 101 (80.2%) always, 21 (16.6%) often and 4 (3.2%) rarely and government teachers responded to the item, 95 (78.5%) always, 20 (16.5%) often and 6 (5%) rarely. From the data, it is evident that the great majority of private and government teachers implement the strategy frequently. The mean value of the data obtained from the observation support this finding.. Most of the observed teachers create a link by revising the previous topic.

Item 4 refers to engaging students in-group activities and encouraging cooperative learning. Engagement of students in meaningful work with

the help of skillful teachers is the only road to real thinking and learning. The private teachers responded to this item, 11 (8.7%) always, 43 (34.1%) often and 72 (57.1%) rarely. Similarly the government teachers responded to the item 15 (12.4%) always, 39 (32.2%) often and 67 (55.4%) rarely. The majority of private and government teachers performed this activity on rare condition. It is possible to conclude from the data that this aspect of constructivist strategy is poorly implemented in both private and government schools. This is also confirmed by the data obtained from classroom observations. Only one teacher, among the observed 12, made an attempt to group his students. More over, the mean values for both private and government teachers are 2.51 and 2.57 respectively which are less than the value which is often, three.

Item 5 is about structuring the lesson around relevant, authentic and meaningful activities. Learning will be meaningful and interesting when the lessons are relevant to real life in the society. Teachers should raise questions that are relevant to real life. The data in item 5 indicates that the private teachers responded to the item, 20 (15.8%) always, 32 (25.3%) often, and 74 (58.7%) rarely. Similar to this, the government teachers responded to the item, 14 (11.6%) always, 37 (30.6%) often and 70(57.8%) rarely. A little more than half of teachers in both private and government schools perform the activities on rare occasions which contradict the basic principles of constructivist learning and teaching process. Rather they seem to promote the traditional way of teaching.

The data obtained from observation also revealed that most of the teachers do not involve their students in hands on activities. They do not provide them with real life situation and encourage them to discuss on it.

Item 6 is about challenging students, thinking by asking them open ended questions and give them 'wait time' for their responses. Students come to class with a prior knowledge they constructed from their experience. Teachers not only recognize this but they should also assess this knowledge. One important strategy is asking them open-ended question and wait for their response. The brain needs time to either accommodate or assimilate the new information.

The data in item 6 indicates that the private teachers responded to it, 31 (24.6%) always, 50 (39.7%) often, 45 (35.7) rarely. The government teachers responded to the item, 18 (14.9%) always, 63 (52%) often and 40(33.1%) rarely. This data shows that a significant number of teachers from the private and government schools implement this strategy on rare conditions. The mean values of this item for private and government teachers are 2.88 and 2.81 respectively. This shows that the teachers in both schools do not frequently implement this strategy. This finding is also supported by data obtained from observation. Most of the observed teachers, rather than asking open-ended questions, they asked their students simple fact recall question. They were impatient even to wait for an answer. To my surprise some questions were answered by themselves with out even giving a chance to students.

Item 7, in table 4 is about engaging students in dialogue with their peers as well as with their teachers. The traditional way of teaching involves monologue, a one-way transmission. Students are passive receivers of information. They are no different than a container to be filled. The data in table 4 shows responses, 20 (15.8%) always, 51 (40.5%) often and 55 (43.6%) rarely of private teachers. The government teachers responded to the item, 8 (6.6) always, 39 (32.2%) often, and 74 (61.2%) rarely.

It can be concluded that the majority of teachers do not use dialogue as a means of teaching strategy. Dialogue is a mode of discourse in constructivist classrooms. It is seen as a way for students to share their knowledge and thereby facilitate each other's construction. Moreover, the mean value of private and government teachers (2.72 and 2.45 respectively) confirms that teachers use the strategy on rare occasions. Another point worth to mention from the data is that, on relative bases, private teachers than government teachers implement this strategy better. The data obtained from the observation of classrooms is in support of these findings. Teachers seem to favor very quite classrooms where students are working individually in a competitive manner.

Item 8 is about involvement of students in decision-making process. The responses of private teachers always 32 (25.4%), often 50 (39.7) and rarely 44 (34%) and the responses from the government, always 21 (17.3%), often 45 (32.2%) and rarely 45 (37.2%). It is possible to conclude

that significant number of teachers do not involve their students in decision-making process.

Item 9, is about continuous assessment, whether teachers use continuous assessment as an integral part of teaching or not. Constructivist teachers assess students learning in the context of daily teaching. They do not view assessment of students as a separate and distinct from classroom normal activities but embed assessment in classroom activities. The response of private teachers were always 21 (16.7%), often 41 (32.5%), rarely 64 (50.8%) and the responses of government teachers were always 16 (13.2%), often 40 (33%), rarely 65 (55.7%). From the data it is evident that slightly more than half of both the government and private teachers do not implement continuous assessment in their teaching. This is also supported by the data obtained from observation.

4.4. Teachers performance of constructivist teaching strategies as observed in class rooms

Table 5. Classroom performance of teachers as observed in classrooms.

No	Item	Private Teachers		Government Teachers	
		Mean	Rank	Mean	Rank
1	Students prior knowledge is assessed ➤ The teacher asks questions about topic/concepts ➤ Encourage them to forward their views	2.75	3	2.58	4
2	The teacher asks higher order cognitive questions	3	2	2.95	3
3	Alternative ideas and misconceptions of students are identified ➤ The teacher respects and value all ideas of students	3	2	3	2
4	The teacher structures the lesson around big ideas. ➤ The lesson goes from whole to parts	3.3	1	3.5	1
5	The classroom is democratic ➤ The students are involved in controlling class discipline ➤ They are involved in decision making	3	2	2.3	6
6	The students are engaged in hands on activities, authentic activities that are relevant and meaningful teachers use raw data, primary source and interactive materials and encourage students to use them.	2.3	6	2.5	5
7	The teacher asks open ended questions that challenge students thinking and 'wait time' for responses	2.6	4	3	2
8	The students are engaged in group activities and discussions	2.5	5	2.5	5
9	The students are engaged in dialogue with the teachers as well as their peers	3	2	2.5	5
10	The teacher is a guide, a facilitator ➤ Gives them advise ➤ Intervene when necessary	2.5	5	2.5	5

The data in table 5 shows the performance of teaching activities in classrooms. During the time of observation, most teachers tried to connect the previous lesson with the current one with the form of

revision. They stick strictly to the text. They do not try to relate the content to real life outside the classroom. Assessing prior knowledge is not simply revising the past lesson. Presenting a topic; asking students how to go about it; modifying it if there need be; accepting their experiences and point of views; encouraging them to generate ideas; allowing them to discuss between themselves in small groups; providing students interactive materials were not very well applied by both the government and private teachers. Teachers perception of constructivist teaching strategies as indicated in table one, is very high; but paradoxically their performance as judged by themselves and as observed in the class rooms is below moderately applied [below a mean value of 3]. This is supported by the value of grand mean, which is 2.79 for private teachers and 2.73 for government teachers. This may be due to hindering factors that are identified in table five. This shows that the government and private school teachers lack the necessary skills of constructivist teaching strategies.

4.5. Hindering factors of application of constructivist teaching strategies

Table 6. Factors that hinder the application of constructivist strategies

No	Item	Private Teachers		Government Teachers	
		Mean	Rank	Mean	Rank
1	Students lack of interests	3.06	3	3.15	1
2	Teachers lack of interest	2.6	6	2.83	5
3	Lack of teaching materials	2.8	5	3.04	4
4	Lack of administrative support	2.55	8	2.33	12
5	Lack of parental and community support	2.39	13	2.81	6
6	Maximum teaching load	3.5	1	2.71	10
7	Lack of knowledge and skill of teachers	2.41	12	2.09	13
8	Rigid time table	2.57	7	2.75	9
9	Classroom setting being not suitable	3.03	4	3.05	3
10	School environment being not suitable	3.15	2	3.09	2
11	Large class size	2.48	10	2.8	7
12	Additional workload apart from teaching	2.46	11	2.79	8
13	The text books are not suitable to engage students in such activities	2.51	9	2.69	11

As can be seen in the table 6, the mean values were computed for each item and ranked according to the seriousness of the problem. If we take the problems which ranked from 1 up to 6 (very serious problems in both government and private schools), five of the problems are the same type. From this it can be concluded that, students lack of interest, teachers lack of interest, lack of teaching material, classroom setting and school environment not being suitable are the most serious problems in both government and private schools. On the contrary the problem which ranked first in private school, maximum teaching load, item 6, is not a serious problem in government school. On the other hand, lack of community and parental support is a serious problem in government schools but it is not a serious problem in private schools. This condition is also confirmed by the data obtained from interview. Parents have closer relationships with private schools, where as in government schools this is not so.

In addition to classroom observations, the pedagogical centers, laboratories, libraries were observed. In the observed government schools, there are no laboratories. The pedagogical centers do not have sufficient materials and teachers' do not actively participate in the center. Similarly in private schools, class room lessons are not supported by laboratory experiment

Chapter 5

Summary, Conclusions and Recommendations

5.1. Summary and Conclusions

The purpose of the study was to assess and compare constructivist teaching strategies in government and private second cycle primary schools. Four research questions were formulated and instruments were developed to collect adequate and relevant data. The instruments were observation, questionnaire and interviews. The research questions were:

1. What is the perception and knowledge of teachers towards constructivist teaching learning strategies? Are there noted differences in perception and knowledge between private and government second cycle primary school teachers?
2. To what extent constructivist teaching practices are practiced by government and private second cycle primary school teachers? Are there noted differences between them?
3. What factors hinder the application of constructivist teaching strategies in government and private second cycle primary schools?

The data were collected using questionnaire, observation and interviews.

The findings of the study are summarized and concluded as follows:

- The perception of both government and private school teachers is higher. The study revealed that both private and government teachers believed that students come to class with prior knowledge. However, regarding this issue the private teacher perception is slightly higher than the government teachers.
- Both government and private teachers believed that students are not simply passive receivers of information but they are active constructors of knowledge.
- The study also disclosed that, (93.7%) of the private and all government teachers believed that student-centered class room environment facilitates learning
- The private teachers (94.4%) and (87.6%) of government teachers believed that learning is not memorization of facts but understanding of concepts.
- 86.5% of private teachers and 87.6% of government teachers believed that students should be involved in problem solving activities.
- Nearly all teachers in both private and government schools believed that teachers are facilitators, a guide and coach.
- Regarding the role of social interaction, 90.5% of private and 91.7% of government teachers believed that learning is facilitated by social interaction.

- 59.5% of private and 67.3% government teachers believed in student's involvement in open ended activities in contrary to this 33% private and 12.4% government teachers opposed this learning principle. Government teachers seem to have a better perception.
- The private teachers (89.6%) and government teachers (82.6%) believed that learning environment should be democratic and students are involved in decision making process.
- The great majority of teachers believe in that multiple perspectives and representation of concepts encourages learning. 7.1% of private and 4.1% of government teachers were uncertain to decide on this issue.
- The great majority of private (96.9%) teachers and government (91.7%) teachers believed that assessment should be continuous and integral part of teaching. However, 3.1% of private and 8.3% of government teachers were uncertain to decide on the issue.
- Regarding their performance, although higher percentage of teachers assess students' prior knowledge, 26.9% of private and 26.4% government teachers perform the activity on rare occasions. The mean values of government (2.85) and private teachers (2.92) indicate that teachers assess their students' prior knowledge or rare cases.
- Both government and private teachers accept and respect students different point of views frequently in their teaching

- 57.1% of private and 55.4% of government teachers do engage their students in group activities in rare occasions. This aspect of constructivist strategy is poorly implemented.
- A little more than half of the teachers 58.7% ,private and 57.8%, of government teachers do not engage their student on relevant meaningful authentic activities. They seem to promote traditional teaching.
- Significant number of private teachers (35.7%) and government teachers (33.1%) engage their students in open ended activities rarely. Moreover, the mean value of government (2.57) and private teachers (2.53) indicate that the activity is performed on rare occasions.
- 61.2% of government and 43.6% of private teachers do not use dialogue as a teaching strategy on regular bases. In this regard, the private teachers implement this aspect of constructivist strategy better than the government teachers.
- Regarding the involvement of students in decision making process 65.1% private and 49.5% of government teachers implement the strategy on always basis. However, 34% of private and 37% of government teachers do implement the strategy on rare occasions. The rest are unable to decide on the issue. The mean value for government (2.8) and for private (2.9) shows that the strategy is implemented poorly.

- Regarding the implementation of continuous assessment, more than half of both private (50.8%) and government (55.7%) teachers perform the activity rarely. they rely on tests and examinations. The class room observation on the application of constructivist strategies, the average mean value of government teachers is (2.73) and private teachers is (2.79). This indicates that the teachers implement the strategies on rare conditions.

Generally, it can be concluded that constructivist teaching strategies are not well applied in both government and private second cycle primary schools. Both government and private teachers lack the necessary skills of constructivist teaching strategies.

Failure in the implementation of constructivist teaching strategies is attributed to the following major hindering factors.

- The most serious problems common for both private and government schools are students lack of interest in learning, teachers lack of interest in teaching, lack of teaching materials, unsuitable class room setting, unsuitable school environment, rigid time table. Apart from this, higher teaching load in private schools and lack of parental and community support in government schools are identified as serious problems.

5.2. Recommendations

Based on the findings of the study, the following recommendations are forwarded:-

- Knowing the principles of constructivist teaching alone does not guarantee effective implementation. So teachers need to have commitment in practicing the strategies for this purpose, Seminars, work shops and training should be given to teachers in order to upgrade the skills to implement constructivist teaching strategies.
- Schools, kebele education board and sub city officials should give concern and work hard towards fulfilling the necessary facilities in classrooms and schools as a whole. Unattractive classrooms have detrimental effects on learning and teacher effectiveness.
- There is a need for teachers to engage their students in group activities. Teachers need to have positive and supportive human relation with their students which is critical to the process of teaching and learning.
- In order to motivate students, rather than focusing on isolated pieces of information teachers need to show its relevance, connectedness to real life situations and other disciplines. They should stretch their teaching beyond the text books.

- The school improvement program (SIP) and continuous professional development (CPD) program which are currently practiced in schools of Addis Ababa should be strengthened.
- In built supervisions with in the department should be strengthened because it provides opportunity to learn from others.
- Reliance of teachers on tests and examinations need to be minimized. Teachers need to consider assessment as a part of teaching and assess their students using observation checklist, portfolios, group work and project work.
- In order for parents and the community as a whole, to play their expected role, parents teachers association should be strengthened.
- There is a need to conduct research on other cycles in all types of schools to examine the status of teaching practices
- Private schools need to find a means to off the burden of periods so that teachers will have time to think and reflect on their teaching practices.

Reference:

- Applebee, A.N. (1993). **Literature in the secondary school: studies of Curriculum and instruction in the United States:** Urbanall: National Council of teachers of English
- Anderson, J.R., Reder, L.M. and Simon, H.A (1996). **Situated learning and deduction.** Educational researcher, 25(94) 5-11
- Anderson, R.D., (2002). **Reforming science teaching what Research says about Inquiry.** Journal of science teacher education.13 (1), 1-12.
- Anderson, L.W. (2004). **Increasing teachers effectiveness** (2nd ed). UNESCO: international institute for education planning Spain Marco Grafico, S.L.
- Brookfield, S.D.(1995). **Becoming critically reflective teacher.** C: Jossey-Bass publisher
- Brooks, J.G., & Brooks, M.G. (1993). **In search of understanding: the case of constructivist classrooms.** Alexandria VA: ASCD
- Brown, J.S., Collins, A. and Duguid, P. (1989). **Situated cognition and the culture of learning.** Educational researcher, 18 (1), 32-42
- Caine, R.N. & Caine, G. (1991). **Making connections: Teaching and the human Brain.** Alexandria, VA: Association for supervision and curriculum development.
- Chaille, C. & Britain, L., (1991). **The young child as a scientist: A constructivist approach to early childhood science education.** New York, Harper Collins publishers Inc.
- Cobb, P. (1996). Where is the mind? A coordination of Sociocultural perspectives. In C.T. Fosnot (Ed.) **Constructivism: Theory Perspectives and practice.** New York: Teachers College press
- Collins, A. (1991). **Cognitive apprenticeship and instructional technology.** Eric Document # ED 331465

- Combs, A.W. (1976). Fostering maximum development of the individual. In Van Til & K.I.J. Rehg (Eds.). **Issues in secondary education**. (NSSE year book, 1976). Chicago. National society for the study of Education.
- Coply, J. (1992). The integration of teacher education and technology: a constructivist model. In D. Carly, R. Carey, D. Willis, and J. Willis (Eds) **Technology and teacher education**, Charlottesville, VA: AACE, 681
- Derry, S. (1999). **Cognitive schema theory in the constructivist debate in Educational psychologist** 31(3/4) 163-174
- Devries, R. & Zan, B. (1994). **Moral classrooms, moral children creating constructivist atmosphere in early education**. New York: Teachers College press.
- Donovan, M.S., Bransford, I.D., and Pellegrino, J.W. (Eds). (1999). **How people learn: Bridging research and practice**. National academy: Washington DC.
- Driver, R. (1989). Changing conceptions. In: P. Adey (Ed). **Adolescent development and school science**. London: Falmer press
- Driver, R. & Easley, J. (1978). **Pupils and paradigms: A review of literature related to concepts developments in Adolescent science students**. Studies in Science Education, 5,61-84
- Duffy, T.M. and Jonassen, D.H. (1991). **New implications for instructional technology?** Educational technology, 31(3), 7-12
- Duffy, T.M. and Jonassen, D.H. (1992). **Constructivism and the technology of instruction: A conversation**. Hillsdale NJ: Lawrence Erlbaum Associates.
- Edmondson, K.M. & Novak, I.D. (1993). **The interplay of scientific epistemological views, learning strategies and attitude of college students**. Journal of research in science teaching, 30, 547-559

- Fischer, K.W. and Farar, M.J. (1987). **Generalizations about generalizations. How a theory of skill development explains both generality and specificity.** International Journal of psychology. 22: 643-72
- Fosnot, C.T. (1996). **Constructivism: theory, perspective and practice.** New York: Teachers College press.
- Fosnot, C.T. (1989). **Enquiring teachers Enquiring learners. A constructivist approach to teaching.** New York: Teachers college press.
- Gagne, E.D. (1985). **The cognitive psychology of school learning.** Boston; Little, Brown & Company.
- Gagnon, G.W. & collay, M. (2001). **Designing for learning. Six elements in constructiist classrooms.** Thousand oaks, CA: Crown press, inc.
- Good, T.L, and Brophy, J.E. (1994). **Looking into classrooms (6th. ed.)** New York, NY: Harper-Collins College publishing
- Gredler, M.E. (1997). **Learning and instruction: theory into practice (3rd ed).** Upper saddle river, NJ: prentice Hall Inc.
- Hein, G.E. (1991). **'Constructivist learning theory' Sanfrancisco, Calif: Institute for learning.** Retrived online june 24, 2002 from
<http://www.exploratorlum.educ/IFI/resources/constructivistarning.html>
- Jonassen, D.H. (1991). **Objectivism versus constructivism: do we need a new philosophical paradigm?** Journal of Educational research, 39(3), 5-14.
- Kauchak, D.P. & Eggen, P.D. (2003). **Learning and teaching: Research-based methods (4th ed.).** Boston: Allyn and Bacon.
- Kelly, G.A. (1991). **The psychology of personal constructs: volume one A theory for personality.** London: Routledge

- Kohn, A. (1997). **How to teach values: A critical look at character education.** *Phi Delta Kappan*, 78, 4299-439
- Lebow, D. (1993). **Constructivist values for system design: Five principles towards a new mind set.** *Educational Technology Research and Development*, 41, 4-16
- Lindfors, J. (1984). **How Children learn or how teachers teach? A profound confusion.** *Language Arts*, 61(6), 600-606
- Martin, D. (1998). **A journey to constructivism**
<http://dougiamas.com/writing/constructivism.html>
- Mintesnot, Y. (2006). **Application of constructivist teaching strategies: A case study at two private schools in Addis Ababa.**
- Murphy, E. (1997). **Characteristics of constructivist teaching and learning. Constructivism: from philosophy to practice.** Retrieved from <http://www.calica/-elmurphy/emurpry/cle.htm>
- Newby, T.J., Stepich, D.A, Lehman, J.D. and Russell, J.D (1996). **Instructional technology for teaching and learning: designing instruction, integrating computers and using media.** NJ: Prentice Hall.
- Novak, J.D. (1985). **Meta learning and Meta knowledge strategies to help students learn how to learn.** In L.W.T. West & conceptual change. (PP.189.209). New York: Academic press, inc.
- Piaget, J. (1971). **Genetic Epistemology.** New York: Columbia University press.
- Piaget, J. (1977). **The development of thought; Equilibrium of cognitive structures.** New York: Viking press
- Resnick, H.B. (1987). **Learning in school and out educational research**
16, 13-20

- Rhodes, L.K and Bellamy, G.T. (1999). **Constructivism**
<http://en.wikipedia.org/wiki/constructivism>
- Richardson, V. (2003). **Constructivist pedagogy**. Teachers college record, 10599, 1623-1640.
- Savery, J.R. and Duffy T.M. (2001). Problem based learning: **An instructional model and its constructivist framework**. W.W. Wright Education Building, ED 2201 Bloomington, In 47405-1006.
- Schon, D.A. (1987). **Educating the reflective practitioner**. Sanfrancisco: Jossey-Bass limited.
- Slavin, R.E (1995) **Cooperative learning (2nd ed)**. Boston: Allyn and Bacon. Woolfol..., A.E 91998) Education (7th ed.) Boston Allyn and Bacon.
- Temechegn Engida (2002). **Teaching primary school subjects using learner-centered methodology**. The Ethiopian Journal of Educational Researchers association
- Temesgen, F. (2001). **Application of the elements of the constructivist teaching strategies in upper primary science. a study at some selected primary schools of Addis Ababa**.
- Von 'Glasserfeld, E. (1988). **Cognition, Construction of knowledge and teaching** Eric Document #ED 294754
- _____ (1989). **Cognition, construction of Knowledge, and teaching, syntheses 80, 121-140**
- _____ (1995). **Radical constructivism: A way of knowing and learning**. London: Flamepress
- Vygotsky, L.S. (1978). **Mind in society: the development of higher psychological processes**. Cambridge MA: Harvard University press

Appendix A
Addis Ababa University
School of Graduate Studies

Department of Curriculum and teachers professional development studies

Questionnaire to be filled by second cycle primary school teachers.

The main purpose of this questionnaire is to collect data on the application of constructivist teaching strategies in government and private second cycle primary schools. Your genuine responses are highly valued in the reliability of this research so you are kindly requested to respond to all items given.

Thank you in advance for your cooperation.

Direction

- Do not write your name
- Please provide your responses by writing on the spaces given for part I & V.
put (√) mark in the boxes of your choice for part II, III & IV.

Part I.

Personal information

- 1.1. Name of School _____
- 1.2. Sex _____
- 1.3. Age _____
- 1.4. Qualification _____
Major _____ Minor _____
- 1.5. Work experience in years _____
- 1.6. Teaching load in a week _____

Part III.

The following are classroom teaching activities. How often do you practice them in your daily teaching career? please indicate your response by putting (√) mark in the corresponding box of your choice.

No	Activities	Always	Often	Rarely	Never
3.1	I assess students prior knowledge				
3.2	I respect and accept different students point of views				
3.3	I help them connect the previous lesson with the current one.				
3.4	I engage my students in group activities. I encourage cooperative learning.				
3.5	I structure the lesson on relevant, authentic and meaningful activities				
3.6	I challenge their thinking by asking them open ended questions and give them 'wait time' for their responses				
3.7	I encourage them to engage in dialogue with me as well as with their peers				
3.8	I involve my students in decision making processes such as controlling class discipline				
3.9	My assessment is continuous and integral part of teaching-learning process. I use portfolios, observation and other methods apart from examinations				

Part IV.

Applying teaching strategies (group discussion, problem solving activities, Experimentation, role playing, debating,) which actively involve your students in learning may be hindered by the following factors. Please respond to the items by putting (√) mark in the corresponding box of your choice.

No	Factors	Most Serious	Serious	Not serious	Not applicable
4.1	Students lack of interest				
4.2	Teachers lack of interest				
4.3	Lack of teaching materials				
4.4	Lack of administrative support				
4.5	Lack of parental and community support				
4.6	Maximum teaching load				
4.7	Lack of knowledge and skill of teachers				
4.8	Rigid time table				
4.9	Classroom setting being not suitable				
4.10	School environment being not suitable				
4.11	Large class size				
4.12	Additional work load apart from teaching				
4.13	The text books are not suitable to engage students in such activities				

4.14. Please write other unmentioned factors that you think hinder the above teaching strategies.

Part V

Please respond to the following questions

5.1. Have you taken training related to improvement of your teaching performance at regional, sub city or school level?

5.2. If your answer is yes to the above question, would you please write the benefits you got form the training.

5.3. What other methods do you use to assess your students other than paper-pencie test?

Thank you!

Appendix B

Class Room Observation

No	Activities in the Class room	Very well applied	Moderately applied	Not applied	Not applicable
		4	3	2	1
1	Students' prior knowledge is assessed <ul style="list-style-type: none"> ▪ The teacher asks question about the topic/concepts ▪ Encourage them to forward their views 				
2	The teacher asks higher order cognitive questions				
3	Alternative ideas and misconceptions of students are identified <ul style="list-style-type: none"> ▪ The teacher respects and value all ideas of students 				
4	The teacher structures the lesson around big ideas. The lesson goes from whole to parts				
5	The classroom environment is democratic <ul style="list-style-type: none"> ▪ The students are involved in controlling class discipline ▪ They are involved in decision making 				
6	The students are engaged in hands on activities, authentic activities that are relevant and meaningful teachers use raw data, primary source and interactive materials and encourage students to use them.				
7	The teacher asks open ended questions that challenge students thinking and 'wait time' for responses				
8	The students are engaged in group activities and discussions				
9	The students are engaged in dialogue with the teacher as well as their peers				
10	The teacher is a guide, a facilitator. <ul style="list-style-type: none"> ▪ Gives them advice ▪ Intervene when necessary 				

Appendix C

Interview items for teachers

- 1 Apart from lecturing to students, what other methods do you employ in your teaching?
- 2 How do you start teaching in your class?
- 3 What effort do you make to improve teaching practices in your departments?
- 4 When do you say that students learn most?
- 5 How do you respond to students wrong answers?
- 6 How do you define active learning?
- 7 How do you describe teachers' relation with their students?
- 8 What are the factors that hinder constructivist teaching strategies from being implemented in your school?

Declaration

I, the undersigned, declare that this thesis is my original work, has not been presented for a degree in any other university and that all sources of materials used for the thesis have been dully acknowledged.

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

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Date of Approval June 30, 2008