

A STUDY ON TEACHING COMPETENCIES OF BACHELOR
DEGREE HOLDERS IN TEACHING PREPARATORY CLASSES
(11th AND 12th GRADES): THE CASE OF NORTH
SHEWA ZONE (OROMIA)

BY: TEMESGEN SHEGA



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*A Thesis submitted in
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For the Degree of Master of Education in Curriculum and Instruction*

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ABSTRACT

The purpose of this study was to investigate the effectiveness of high school teachers (those who have first degree) in implementing the new curriculum according to the new direction of teaching (teaching how to learn). Dewey argued that a quality or effective teacher has the "ability to think scientifically, an unusual love and aptitude in some one subject, genuine insight into all subjects and the ability to communicate love of learning to others." If education is under consideration, the aim cannot be merely to train students, as if they are dogs, to act in certain ways. But education concerns teaching with regard for students' capacity to know, understand and reason. Education should not be reduced to training or conditioning behavior.

In the last 12 years many promising actions have been taken to raise the quality of education at all levels. Varieties of instructional materials and equipment have been purchased, short training and workshops have been conducted and new curricula have been developed, but the competence of curriculum implementers (teachers) has not been investigated yet. There is information that high school teachers are not implementing the curriculum the way it is expected. Students have discussed it formally and informally, as teachers are not competent enough to implement the curriculum. Some teachers also reported as they faced difficulty in implementing the new curriculum. This complains initiated the researcher to conduct research on teachers' competence in implementing the curriculum.

This study followed a descriptive survey method. Questionnaires were administered to available samples of 67 teachers (to those who have bachelor degree in teaching) and to 33 instructional leaders (principals, vice principals, department heads and supervisors). Classroom observation, document analysis, structured and unstructured interview were also used to collect detailed information.

The findings indicated that a large proportion that is 73.13%, 88.06%, 94.03%, 100.00% and 70.115% of the teachers rated themselves as "poor" in stimulating thought provoking questions, in using varieties of teaching methods, in relating lessons to students personal experiences and real world situations, and in organizing instructional tasks that advance higher order thinking respectively. It was concluded that most teaching in North Shewa Zone (Oromiya) was formal and didactic. Activity-based learning was rare. Some teachers were aware of other methods but they rarely used them.

Pre and in-service programs will have to prepare prospective teachers in both professional skills and attitudes necessary for accepting teaching responsibilities. The teachers also have to develop their capacity for self-sustaining professional growth. Since subject matter knowledge, pedagogical and psychological skills are the prerequisite criteria for teaching, the researcher recommends that all teachers should be committed all the time to improve their subject knowledge and pedagogical and psychological skills through reading up-to-date educational and research literature, because it is quite impossible to train teachers fully and for life during initial teacher training.

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the Study

Education can no longer be considered as a matter of filling a student with subject matter. Psychological findings about thinking, creativity and concept building all support this conclusion.

We want students to develop deep understandings and reflect thoughtfully about what they are learning. We want them to become scientific inquirers, critical thinkers, systematic problem solvers and value-based decision makers. If these lofty goals are to be accomplished, we need to teach with emphasis on higher order thinking about the application of what is learned.

In the developed countries from 1940's teachers have been studied. Searches for the characteristics and qualities that define "good teachers" have occupied the time and energy of large number of researchers. But in our case, it appears that research conducted relating teachers effectiveness is very limited. Today in Ethiopia, high school teachers complain that the students are not motivated to learn, and students complain that school is not interesting. Parents complain that teachers are not committed to the profession. All are complaining that teachers have difficulty to implement the current curriculum. I have recognized this complain as a serious problem and decided to conduct research regarding high school teachers teaching competencies.

Teaching competence is very important. Knowledge and skill represent the "musts" of teaching which every teacher will find necessary. Obviously, teachers who are unable to demonstrate these required knowledge and skills at an acceptable level of proficiency will be at a disadvantage in the classroom. Likewise, any teacher education program, which does not prepare its graduates to execute these knowledge and skills, will be vulnerable to charges of inadequacy.

Only, possession of a college degree does not in any way ensure that teachers will be effective. But for many years the sole educational requirement for teaching in the secondary school was a bachelor's degree from a university, even though preparation for teaching in secondary school was expected to include a detailed study of psychology and the acquisition of effective teaching skills.

Scholars in the field for example, Smith (1989: 207), Holt (1981: 164-65), and Goodlad (1994: 109) have grouped the desirable teacher traits in four categories, such as personal qualities, teaching skills, professional attitudes, subject and general knowledge. Carin (1997: 215) and Wellington (1980: 234) have also advanced similar ideas. According to the educators, the most important characteristics of effective teachers include subject matter mastery, dedication, co-operation, creative, discipline, subject matter organization, daily preparation, attention to individual needs, stimulation of thought, skill in motivating work, friendliness and professional interest.

According to Clark and Starr (1994: 83) good teachers need to have a mastery of subject knowledge they teach and the professional skills needed to teach it to learners of different ages, abilities, aptitudes and backgrounds. But they also need those skills,

which are necessary for the effective performance of their role outside the classroom in the social life of the school, and in relationship to parents and the community.

In similar words Tobin (1986: 72) confirmed that knowledge of the subject taught, interest in teaching, in students, or professional know-how are very essential to teacher effectiveness.

In his massive study, Berliner (1998: 315-316) concluded that competent teacher continues to study the nature of learning, he/she knows his/her students abilities, he/she knows his/her subject and he/she knows how to teach.

In his comprehensive study, Farrar (1987: 136-137) has recommended three major desired competences (knowledge, skill and attitudes) to make teaching successful. According to his recommendation, the teacher should set instructional priorities, develop sequence of objectives and activities, use table of specifications for planning, write behavioral objectives in measurable terms, determine and select appropriate instructional strategies and activities, select activities that will motivate for learning, plan a variety of activities, plan follow-up activities to reinforce learning. The teacher should have knowledge of the relationship between instructional strategies and learning styles, sequencing skills, individual needs, activities for fighting boredom. He also suggested the teacher should believe that good planning is prerequisite to good teaching, believe in flexible planning and be sensitive to the needs of different cultural groups.

Not all teachers are competent, just as all lawyers, engineers, economists... etc., are not. Anyone who has been in an administrative or supervisory position knows that

incompetent teachers exist. In the last five years, we have heard many complains from high school students and parents. Some students have reported repeatedly as many teachers did not satisfy their learning needs.

1.2 Statement of the Problem

Effective learning requires that each person develop his or her intellectual power to the maximum. In a complex world, it is essential that each person develop to some extent the ability to reason logically, to weigh evidence and to draw conclusion. Following the introduction of the new education and training policy, Ministry of Education has embarked on program of curriculum reform for primary and secondary high schools which focuses on the development of "problem solving capacity, enrichment of inquisitive ability and creativity" but high school teachers are teaching still in the way they were taught years ago.

In the last 12 years, a great number of educational workshops had been conducted at national and regional levels. Millions of birr invested to print textbooks, to buy computers, to up grade diploma holders to degree level, to build new schools. In spite of all these efforts, research that has been conducted to identify the competencies and deficiencies of high school teachers is insignificant in number. This, therefore, leads the researcher to conduct this investigation.

In view of the problems so far discussed, the major purpose of this thesis is to examine the deficiencies of the teaching force in implementing the new high school curriculum and thereby to identify problems encountered by teachers during the implementation. The investigation focused on five general areas: teachers intellectual (academic)

quality, professional skills, psychological knowledge, professional commitment on the part of teachers to improve the quality of teaching and learning.

In more concrete terms, the main objectives of this study are to:

- a. evaluate the subject matter knowledge of high school teachers,
- b. assess the professional skills of teachers in using varieties of teaching methodologies and techniques,
- c. evaluate teachers skills in treating individual differences,
- d. identify the major deficiencies of teachers in teaching subjects and to suggest some possible solutions.

It is in view of this that the researcher raised the following pertinent basic questions here under, in an attempt to attain the purposes identified in this study.

Basic Questions

1. Do high school teachers have adequate knowledge in subjects they teach?
2. Do high school teachers use varieties of teaching methods/techniques?
3. To what extent high school teachers treat individual differences in teaching?
4. What are the specific weaknesses of the high school teachers in teaching subjects (language (English), mathematics, natural sciences and social sciences)?

1.3 Significance of the Study

For the past many years the problem of education had received little attention, recently however, the question of quality of education has become an agenda of educators and

politicians. But still the new direction of teaching is not given due attention. Our schoolteachers and instructional leaders are far behind the revolution in teaching.

It is at this point in time that this study plans to pinpoint and investigate teacher-related problems that impeded effective teaching at high school level. Besides, this study will have the following contributions.

First, it is hoped that this study will create awareness about the importance of using multiple teaching methods. Second, the findings of the study can help educational practitioners to see their own shortcoming and strong sides for further improvement of teaching-learning process. Third, this study may help teachers and instructional leaders to be informed about the real problems in teaching and to take corrective measures whenever possible. Fourth, since research work on the teachers' effectiveness has not gained much attention, this study may motivate other researchers interest. Last but not least, since the study area is limited to one administrative zone of the country, the findings are expected to serve as a baseline for future detail investigation at national level.

1.4 Delimitation of the Study

The study was limited to North Shewa Zone (Oromia region). This zone was deliberately chosen, because according to the annual reports of Oromia Education Bureau (1997-2003) North Shewa Zone stood the 2nd from the last in academic achievement (9-12th). There are 9 high schools in the zone. It was delimited to 6 high schools. It is hoped that the responses of these sampled respondents may serve as a representative.

Involving more than one zone demands much more time than was available for this research to be accomplished and submitted as scheduled. Even though aspects of competence that requires investigation are numerous, the scope of this study is limited to the teachers' subject matter knowledge, pedagogical skills and psychological knowledge in implementing the new curriculum. As a result, other issues related to teacher competence such as effective use of teaching aids, counseling, record keeping, organizing extra-curricular activities, consulting parents, participating in community service activities etc... are not considered. This is due to the fact that data collection and analysis for all those aspects of teachers' competencies in all activities mentioned above required time and skilled manpower.

1.5 Limitation of the Study

Time constraint was the major limitation of this study. I have asked my boss permission to collect data. But he refused. I have done all my best to collect data for the research within 49 days. In order to overcome time constraints, I have collected the relevant data day and night. When I returned back, I was dismissed from my job. These all had their own negative impact on the quality of the research.

1.6 Definitions of Terms

Teaching Competence:- refers to professional skills, concepts (knowledge) and attitudes in teaching-learning process. (Good, 1973: 121).

Effective Teaching:- refers to use of a plan for instruction or presentation which causes a desired change in the learners behavior (Good, 1973: 589).

Provision of individual differences:- is planning and implementing instruction to meet the ability, interest and needs of different learners (lower, average and higher) (Long, 2002: 85).

Higher Order Thinking:- is the ability to interpret, analyze or manipulate information. It also includes the ability yields multiple and original solutions to problems (Long, 2002: 108).

CHAPTER TWO

2. REVIEW OF THE RELATED LITERATURE

The purpose of this part is to review and summarize educational and research literature that deals with teachers' effectiveness in managing learning activities. Before this is done, however, the meaning and concept of teaching will be discussed briefly so as to make things clear for the readers.

Teaching can be defined as an act of providing, directing, checking and following up activities to facilitate learning. Teaching involves three inseparable elements, namely the teacher, the learner and the subject matter or learning experience. Teaching carries three main functions: imparting subject matter and respective activities of students, helping the students in learning and providing techniques of learning, and leading the instructional process including planning, steering, checking and evaluating.

2.1 Concepts of Teacher Quality

It is typically assumed that high quality teacher preparation results in high quality teaching. The concept of quality lies at the heart of most debates about education and teacher education. The perspective of five prominent educators on teacher quality has been discussed here under as follows.

Dewey in Long (2002: 128) argued that quality teacher can best be developed in a laboratory setting because it develops habits that are theoretical rather than empirical. A quality teacher has the "ability to think scientifically, an unusual love and aptitude in

some one subject, genuine insight into all subjects, and the ability to communicate love of learning to others."

For Hutchins (1966: 22) a quality teacher is one who has mastered the three R's, the "liberal arts", and "the greatest works that the human race has produced." Quality teachers are masters of their intellectual subject matter as well as the arts of pedagogy, which are the abilities to organize, express, and communicate knowledge.

Quality teacher in Bestor's (1976: 63) perspective are experts in how to think; that is, they are well educated in those intellectual disciplines that have general applicability. They have the ability to consider evidence according to the reasoning processes and critical methods accepted by the discipline involved. Quality teachers are so dedicated to gaining knowledge and intellectual power that their learning inspires learning in their students.

Brameld (1972: 35) said that quality teachers have the same characteristics as quality physicians: (1) a well-rounded, challenging general education; (2) a solid knowledge in the subject area, which is most necessary to all practitioners; (3) a thoughtful theory or philosophy of their profession that helps them understand the contributions of their profession to the growth of civilization; (4) an abundance of rich experiences in effective practice - that is, in the techniques of their profession.

Silberman (1977: 28) believed that quality teaching consists finding the right balance between individual growth and fulfillment and the transmission of "definite skills, intellectual discipline, and bodies of knowledge." Quality teachers have a sense of purpose or a philosophy of education; they know about the ramifications of the subject

or subjects they teach, about how those subjects relate to others subjects and to knowledge – and life – in general.

Just as definitions about teacher quality differ, so do the ways in which it has been measured. According to Long (2002: 130), approaches to measuring teacher quality have usually taken four forms:

- Classroom observations of teachers;
- Written examinations of teachers measuring their basic literacy, subject matter knowledge, and pedagogical skills;
- Students performance and achievement; and
- Large-scale surveys of teacher qualifications, attitudes, behaviors and practice.

It might be difficult to reach a consensus on exactly what knowledge and skills are unique to the teaching profession, but most educators would agree that special skills and knowledge are necessary and do exist. Certainly teachers must be familiar with students and their developmental stages. They must possess enough command of the subject they are going to teach to be able to differentiate what is important and central from what is incidental and peripheral. They must know how human beings learn and how to create environment, which facilitate learning.

To summarize the above cited perspectives, teachers are expected to have in-depth knowledge of their subject matter and relate it to students, adopt teaching strategies that are responsive to different learners, have a thorough grounding in pedagogical knowledge, and engage in continual curriculum evaluation and professional development.

2.2 Teaching Effective

Clark (1978:11) viewed effective teaching as an attempt to help someone acquire some skill, knowledge, attitude, ideal, or appreciation. According to him the teacher's task is to create or influence desirable changes in behavior. The goal of teaching is to bring about the desired learning in his pupils. The only valid criterion of success in teaching is the degree to which the teacher has been able to achieve the desired learning in his pupils. The teacher must know what learning is desirable for his students, and how to bring about this learning. Teaching is a challenging enough task; therefore, teachers must be willing workers, for teaching is hard work physically, mentally and emotionally.

According to Jaeger (1988: 4) an effective teacher has hunger for knowledge in subject matter, psychology, philosophy, and methods drives him to a ceaseless reading, listening, and observing. He evaluates his teaching self-critically, judges the effectiveness of methods, and is conscious of the atmosphere he creates.

Good teaching is very difficult to define because the term "good" is so value-laden. What appears to be good teaching to one person may be considered poor teaching by another, because each one values different methods or outcomes. One teacher may run the classroom in a very organized, highly structured manner, emphasizing the intellectual content of the academic disciplines. Another may run the class in a less structured environment, allowing the students much more freedom to choose subject matter and activities that interest them personally (Bloom, 1981: 203).

While it remains difficult to agree on what “good” teaching is, effective teaching can be demonstrated. The effective teacher is one who is able to bring about intended learning outcomes. Some educators state that the crucial dimension is the teacher’s personality. Teachers, they will say, should be friendly, cheerful, sympathetic, morally virtuous, enthusiastic and humorous.

In a massive study, Ohles (1982:17-18) concluded that effective teachers are fair, democratic, responsive, kindly, stimulating, original, alert, attractive, responsible, and confident. He also remarked ineffective teachers as partial, autocratic, aloof, restricted, harsh, dull, stereotyped, apathetic, unimpressive, erratic and uncertain.

Mathews (1992:205) has summarized the main characteristics of effective teachers as follows: Effective teachers are knowledgeable, have a strong general background and understand the subject matter at a high level. They understand how adolescents learn and they know to encourage learning. Effective teachers have knowledge of ethnic diversity and recognized racism and sexism and know how to deal with them. They have the ability to impart knowledge through appropriate instructional techniques for particular situations. They are flexible in making instructional decisions. They model what is to be learned, set appropriate goal levels for academic achievement, concentrate on a few dominant goals, have a clear instructional focus, offer an overview of each lesson, explain exactly what is expected of students, give time for practice, provide feedback. Effective teachers know how to question, motivate, enrich and stimulate student learning. They teach for mastery, have detailed lesson plans with a variety of activities, and revise and reteach based on student achievement as measured in a variety of ways.

Smith (1989: 74) discussed the dynamism of teaching as follows: great teachers never die. Socrates, Plato and Aristotle live because of their teaching. A successful art of teaching is dynamic. It is constantly doubting, experimenting, searching, adding and subtracting. Dynamism does not suggest change for the sake of change but requires a systematic and progressive evolution.

It is universally acceptable fact that no amount of knowledge is ever enough for a teacher. No method is ever perfect. Thus, teachers have to think systematically and evaluate critically their practice and learn from experience.

2.3 General Areas of Teachers Competence

Smith (1989:24) has suggested that a well-trained teacher should be prepared in four areas of teacher competence to be effective in bringing about intended learning outcomes.

- (a) Command of theoretical knowledge about learning and human behavior.
- (b) Display of attitudes that foster learning and genuine human relationships.
- (c) Command of knowledge in the subject matter to be taught.
- (d) Control of technical skills of teaching that facilitate students learning.

For years education has been criticized for its "folk-ways" practices. Many scientific concepts from psychology, Anthropology, Sociology, Linguistics, and other related disciplines are now available to help teachers interpret the complex reality of their classrooms (Holt, 1981:55).

Those teachers who lack the theoretical background and understanding provided by such scientifically derived concepts can only interpret the events of their classrooms according to popularly held beliefs or common sense. Although common sense often serves us well, there is ample evidence that teachers who habitually rely on it will too often misinterpret the events in their classrooms.

Glasser (1993:327) concluded that the problem confronting new teachers is not that the theories put before them are unworkable, but that they simply haven't internalized those theories to the point where they can be used to interpret and solve practical problems. They have not been provided with sufficient opportunities to apply the knowledge, to translate it from theory into practice and thereby master it.

Theoretical knowledge can be used to interpret situations and solve problems, many classroom events that might otherwise go unnoticed or remain inexplicable can be recognized and resolved by applying theories and concepts of human behavior. This is not an easy task. It requires understanding, insight, practice and feedback from colleagues. Proficiency will not be achieved as a result of formal training alone; it is a lifelong process involving both formal training and an unending program of on-the job self-improvement.

The second area of competence identified as essential for effective teaching has to do with attitudes. An attitude is a predisposition to act in a positive or negative way toward persons, ideas, or events. Most educators are convinced that teacher attitudes are a very important dimension in the teaching process. Attitudes have a direct effect on our behavior; they determine how we view ourselves and interact with others (Holt, 1981:83-84).

According to Goodlad (1994: 17) the major categories of attitudes that affect teaching behaviors are: (a) teachers' attitudes toward themselves (b) teachers' attitudes towards children; (c) teachers' attitudes toward peers and parents; and (d) teachers' attitudes toward the subject matter.

Blue (1986: 104) confirmed that command of the subject matter to be taught is an obvious necessity for any teacher. But taking courses in Physics or Geography is not sufficient. A teacher's subject matter preparation really has two aspects: (1) a study of the subject matter itself, and (2) a judicious selection of the material that can be transmitted successfully to the student.

College courses taken in disciplines like Mathematics or English help teachers acquire an understanding of the disciplines, their basic concepts, and their modes of inquiry; but college courses are not directed what should be taught to high school students. What should be taught is obviously much less extensive and requires that teachers know the school curriculum as well.

Teachers must, therefore, rethink much of the content of a particular discipline as it relates to the lives of their students. To be effective communicators, teachers need an understanding of both children and subject matter and, beyond that, special training in linking the two.

Smith (1989:27) states:

...The teacher should know the content he is to teach as well as that of the disciplines from which his instructional subject matter may be taken. The first is necessary for teaching anything at all. The second applies a depth of knowledge essential to the teacher's feelings of intellectual security and his ability to handle instructional content with greater understanding.

The fourth area of competence required of effective teacher is possession of a repertoire of teaching skills. Such a repertoire is necessary if teachers are to be effective with students who have varied backgrounds and learning aptitudes (Blue, 1986:118). Teacher educational programs must, therefore, include a training component focusing on the acquisition of teaching skills. Whereas the knowledge components involved in teacher preparation focus on the contexts or situations that confront teachers, the skills component focuses directly on the trainees – on the observation, analysis, and modification of their teaching behavior.

2.4 Planning Instruction

In making decisions about education, the first issue is to decide what to teach. To make that decision, educators and policy makers need clearly defined goals and objectives for instruction and information about the roles and responsibilities of learners in relation to the specific goals and objectives. For Brookover (1980:15) educational goals are changes in students toward which we want learning outcomes to lead. In other words, educational goals are broad general statement of desired learning outcomes.

Shulman (1987: 31), and Kourilsky and Quaranta (1987: 3) have all advocated that a well organized and integrated instructional plan can be the most important component of an educational delivery system. They also noted teachers with a well-developed plans are in a position to clearly communicate learning objectives to their students. It is helpful to both teachers and students to differentiate between what students are supposed to do during class and what they are supposed to learn.

An educational objective is a clearly defined, observable, and measurable student behavior that indicates learner progress towards the achievement of a particular educational goal. Educational or instructional objectives are used to operationalize educational goals. Reference is often made to a more specific term, behavioral objectives. Behavioral objectives force the teacher to describe the learning outcomes from the learner's viewpoint. Behavioral objectives answer the question "How do you know the learner has learned?" (Kourilsky and Quaranta, 1987: 5).

In short, instructional objectives are student-oriented; place the emphasis upon what the student is expected to do, not upon what the teacher will do. A useful instructional objectives must be descriptive of learning outcome; observable, clear and understandable.

Rosenshine (1988: 47) underlines the importance of lesson plan by saying every lesson needs a plan. The essentials in a daily lesson plan are the objectives, the subject matter, the activities, the list of materials needed, the assignment, and any special notes. These essentials tell us what to do and how to do it. One test of a lesson plan is to ask how each activity in the procedure will help to bring about the desired goal. Instructional planning that includes a balance of cognitive and affective objectives will promote optimal student learning. When the emphasis on affective objectives is at the expense of cognitive expectations, student learning will suffer. When cognitive objectives are overemphasized, learning gains may be made but student attitudes toward learning may be adversely affected. Instructional planning should aim for an appropriate balance of learning objectives.

2.5 The Two Major Approaches in Teaching Methods

Teaching method is the way information is transmitted to the learner. Methods describe conceptually the instructional process, that is, not only how information gets from teacher to learner but also how the learner uses it; interacts with it; receives guidance; is given feedback (Baumann, 1988: 26). The skillful teachers have many methods at his command. Although some of these are better than others, not one of them can be regarded as the best, for there is no best technique (Kierstead, 1985: 97). Using the right method is important, because the quality of student learning is dependent on the effectiveness of the approach used. Not only is teaching important but it is becoming increasingly complex due to the many variables and constraints that affect teaching methods choice. For example, the type and level of learning, the time available, the facilities and size of class are some of the factors that have to be considered. Quite clearly, no one method is suitable all the time or for every situation.

Colen and Chan (1988: 47) have made a clear distinction between teaching methods and techniques. As to them teaching methods are the combinations of teaching plans, strategies and techniques used to organize classroom practice. Teaching techniques, on the other hand, are procedures of the most subordinate status designed to achieve short-term instructional objectives. In short, technique is the way the teacher handles different aspects or phases of his or her instructional methods.

Many research findings show that learning is enhanced if students are more active and independent, with the teacher adopting less of an expository and more of a facilitative and guiding role. Doyle (1983: 134-35) criticizes teachers for being behind the teaching revolution by saying that not everyone accepts this, as yet, but teaching

developments indicate a significant shift towards more student-centered learning with an increase in active participation by students. The result is more variety, flexibility and integration of teaching methods.

Lecture or Expository Approach of Teaching - Gage and Berliner (1984: 241) have come up with the conclusion that lecture or expository approach for teaching is a polar opposite to learning by inquiry. It is receptional learning, based on traditional "chalk and talk" method. In reception learning, the student remains in a passive role and simply receives knowledge that others have gathered and organized. There are times when it is appropriate to use reception learning techniques and expository or lecture teaching. With a huge expanse of content to cover, reception learning may seem an efficient use of instructional time, if transmittal of a finite amount of information is a measure of the desired outcome.

Hammond (1972:164-65) has supported the Gage's and Berliner's conclusion by saying lecture can be used for introducing activities, for motivating pupils, for summing up at the end of units, and for explaining difficult points. They are particularly useful for bridging gaps between topics to be studied in depth, and for presenting information that would otherwise be available to the students.

The Discovery Approach- In this approach teachers try to actively involve students in the learning process. Among the techniques teachers may use to encourage discovery learning are discussions, projects, case studies, problem solving etc.

It should be evident that the basic principle behind the discovery method is to help students discover and create their own knowledge and ideas (Wellington, 1980:94).

The premise underlying all of these techniques is that the student must seek out his own learning rather than just being a receiver of knowledge. This notion, which has been part of educational theory for many years, has now become substantiated firmly enough for teachers to accept it as basic, sound theory. Nevertheless, this theory does not preclude the teacher from presenting information to students.

Clark and Starr (1994: 250) remarked that the principal point in discovery teaching is rather to provide as many instances as possible for students to draw inferences from data by logical thinking, inductive or deductive, as the case may be.

I think it is important here to discuss the importance of different teaching approaches here under in a brief.

The lecture method – As Simon (1986: 42) stated lecture method is a pedagogical method whereby the teacher formally delivers a carefully planned expository address on some particular topics. It is used in secondary schools and above to motivate, to clarify, to review, and to expand contents. But it makes the learners a passive agent in the learning process.

Learning is participating in the learning process, it needs the opportunity to talk, to ask questions, so that best of learning takes place. "There is no teaching where there is no learning". Besides, the lecture does not guarantee that the learner will understand its contents.

Recitation – Gall (1978: 61) defined recitation as "all those episodes when teachers ask a series of questions, one after another, and students give answers in turn. Often the question-answer exchanges are short and the pace is quick."

Teachers usually ask "known information" questions during recitations; that is, the teacher asks question to find out if the student knows the answer, not to get information (Farrar, 1987: 82). Recitation is the predominant mode of instruction in the primary grades and is frequently used in intermediate and secondary grades. Gage and Berliner (1984: 77) reported that recitation accounts for about one third of the instructional time in mathematics and social study classes.

Discussion method – Research has shown that discussion stimulates growth in student's reasoning in important ways, and it is more likely to have this effect if each student encounters and listens to reasoning that is somewhat different from his own. Therefore, teachers should encourage all students to speak during discussions, giving both opinions and reasons and help all students to listen carefully to one another's opinions and reasons. Asking students regularly to paraphrase what others have said is a good way to build the listening habit. Discussion skills do not necessarily develop on their own; they need to be taught and learned.

In discussion, more than one point of view is expressed; different points of view are examined; and the intention is to develop knowledge, understanding and judgment. Eurich (1988: 63) described discussion as the purposeful, systematic exchange of facts, ideas, opinions, points of view, feelings and beliefs. Problem solving is another higher-level cognitive skill that is fostered by discussion. Groups generate higher quality solution and are more committed to carry out solutions (Simon, 1986: 103).

Supporting Simon's idea, Johnson (1988: 64) has advanced similar remark. In his words "viewing problems from the different perspectives in group increases creative problem solving".

In short, discussion provides students with the opportunity to analyze a variety of positions and to test the validity of their own positions against those of others.

Problem solving method –rather it is general strategy in which one can use many different techniques and tactics (Jones, 1986: 62). Many theorists feel it to be the most effective of all teaching strategies. It has been used successfully both as an individual and as a group activity. The solving of problems through group activity recently has been used extensively in teaching and in research. Problem solving is an active search for alternatives. It is goal oriented and involves mental evaluation of several courses of action and monitoring the effectiveness of the alternative chosen (Simon, 1991: 145).

The case study – the case studies are special cases of the problem solving technique in which the students study individual cases representative of a type of institution, issue, problem situation or the like in order to draw conclusion about the types as a whole (Carin, 1997: 303).

Case studies are useful because they not only give students insights into knotty problems, but also they give them opportunities for study in depth. The latter result is particularly important since at present much secondary school learning is superficial (Shuel, 1986: 73).

Project method – a project is a natural, life like learning activity involving investigation and solving problems by an individual or small group. Projects frequently involve the use and manipulation of physical materials and results in tangible products.

Roger (1989: 320) has stressed particularly the importance of project method for brilliant students saying that projects are true inquiry strategies. Students at all levels can be profitable, conduct independent research activities, but ordinarily the academically talented students are more likely to enjoy and profit from project method (Glenn, 1988: 139).

Inquiry method – In teaching by inquiry, one should assume the role of guide rather than dictator. Teachers who use this strategy do not want to present key concepts or question to see if students have the necessary prerequisite knowledge. Instead, the learning objectives allow students to discover key concepts for themselves (Wilén, 1986: 92). Inquiry method puts students in the position of researchers, asking and answering questions about information that may range far beyond the boundaries of a single discipline.

According to Wilén (1986: 105-106) inquiry has three phases: exploration, invention and discovery. During the exploration phase, students read and collect information to verify the facts of the situation. During the invention phase, students consider what they have learned and try to invent a rule to encompass all the examples they have studied. The class examines the rule, testing it against the results of their investigation. They may experiment directly to test the rule. During the discovery phase, students examine their thinking to discover the inadequacies of their rule or hypotheses. They try to modify the rule so that it can be applied more generally.

To conclude, as John Dewey said, "We learn by doing and reflecting on what we do". A great deal of evidence shows that learning is not a passive process. Bruner put it this way, "The student is not a bench-bound listener, but should be actively involved in the learning process." The student must be actively involved in learning. Sometimes teachers misinterpret this concept and limit activity to manual or manipulative activities. Students can be actively involved by listening, speaking, seeing and thinking if their minds are acting properly on what is being learned. The teacher's role should be to find ways to get the student activity involved in whatever activities are presented. Regarding this point Piaget said "no learning occurs without action". It is only through the exercise of problem solving that students will learn the "heuristics of discovery", that is, learn how to learn. They are to learn to generalize what they have learned into a style of discovery that serves them best. Thus, much is expected from instructional leaders at different levels and teachers to bring radical revolution of teaching methods.

Finally, it may help to increase our understanding if we try to place the various methods on a continuum, which is teacher-oriented at one end and student-oriented at the other. It is not easy to position many of the methods because of several factors that may influence the way a method is used. For example, the natural teaching style of the teacher (authoritative or facilitative), the approach to learning of students (deep or shallow), and the influence of constraints (time, resources and size of class) may well alter the position of a method on the continuum. Effective teaching requires all these factors to be taken into account when using a particular method for it is very much a case of getting the "right mix" in the situation applying at the time.

2.6 Behaviorists and Cognitivists: How Do They Define Learning?

Two of the most popular approaches to learning used by teachers today are behaviorism and cognitivism. Prior to about 1975, the dominant approach to studying learning was behaviourism.

Behavioral theories focus on the external aspects of learning including external stimuli, behavioral responses of learners, and reinforcers that follows appropriate responses. Classroom discipline system involving rewards and punishment are often based on behavioral theories (Gagne, 1976: 59).

Behavioral theories also provided background for expository teaching approaches, in which teachers present information to be learned directly to learners. These approaches emphasize analyzing the material to be learned into small segments, writing behavioral objectives for each segment, presenting information to be learned very clearly and concisely, providing for a great deal of student practice, providing immediate feedback on student responses (Carin, 1997: 39-40).

Contrasting a behavioral approach is the cognitive perspective. According to Carin (1997: 60), cognitive psychologists concerned not only with the external, observable events of learning but also with what goes on inside the learner's head: how knowledge is acquired, organized, stored in memory, retrieved, and used in further learning and thinking. In the cognitive view of learning, the learner must be an active constructor of knowledge rather than a passive recipient of information.

2.7 Provisions for Individual Differences

Clark and Starr (1994: 321-22) state individual difference in a multitude of ways:- physical make-up, interests, ability, aptitude, home background, experience, prior training, social skill, attitudes, and needs. This is an inescapable fact of human nature- a fact fraught with profound implications for the teacher. Because of these differences, to treat individuals as though everyone were just alike simply will not work. Some way teachers must adapt their teaching to individual differences.

Based on research findings Adam (1983: 178) have reached on the following conclusion: Not only are students different, but each learns in his own way and at his own rate. No two persons ever learn exactly the same concepts from any learning situation. Nor do any two persons ever develop exactly the same method and degree of efficiency. His interests shape each individual's learning, his physical and psychic make up, his past experience, and his goals for the future and so differs from that of anyone else. Thus, teachers should capitalize on these differences and make them a means of further learning.

2.8 Motivation

The human mind cannot absorb knowledge like a sponge. Neither is the mind a wax tablet upon which a teacher can write. Nor it is a lump of clay the teacher can mold into the shape desired (George, 1976:89). A student is not an inanimate object, but a very active one, and in order to learn, he must act. He may solve problems. He may read. He may listen to his teachers or to his fellow students. He may practice. He

may do any of a hundred things. But if he is to learn, he must do something. No one can learn for him; he must learn himself.

In other words, he learns through his experience. Each experience is an interaction with the environment. He learns from what the environment does to him and from what he does to the environment.

Researchers Kearns (1988: 63) and Hansford and Hattie (1982: 44) have found that there is a clear and positive relationship between positive self-regard or self-esteem and academic success. They also reported that schools are not as successful as should be in motivating students to learn. Other studies have documented the difficulty of providing a stimulating, satisfying and learning environment.

Motivation is very important in the teaching – learning process. Only pupils who are well motivated learn well. Fortunately all normal youth are potentially motivatable. Once their interest is aroused their attention spans are long enough.

According to William (1982:70), one way of motivating students is to harness as far as possible the pupil's natural motives, such as his curiosity, his attitudes, his desires for success etc. .. Another method is to try to make the subject matter seem valuable to the learner. Perhaps the best motivating device is a clear, definite, reasonable assignment.

2.9 Teaching Special Students

Students who deviate from the norm create special problems in teaching. Pupils who fall into this category include the poor learners, disadvantaged pupils, and the talented (James, 1979: 179).

According to James (1979: 184) teaching poor learners requires much skill and patience. Careful diagnosis of each pupil is necessary so that he can receive the kind of help he needs. This diagnostic activity is particularly important because poor learning is often the result of insufficiencies in his earlier education.

As James (1979: 184) noted, the curriculum for poor learners should be simple, practical, realistic, and meaningful. Teaching methods should emphasize concrete, simple activities with sufficient practice. Reading material should be short and easy, but not childish. Consequently, teachers may find it necessary to develop their own materials.

Disadvantaged youth often have many of the problems of poor learners because of gaps and differences in their cultural backgrounds. However, there has been a tendency to underestimate the potential of disadvantaged youth. Their academic failures are more often failures of the school and the community than student failures. In dealing with these students, one must treat them with the respect they deserve (Frank, 1982:266).

Much of the teaching of slow and disadvantaged learners must be remedial. Remedial teaching differs from other teaching only in that as a rule it is concentrated directly on the pupil and his needs after thorough diagnosis.

Frank (1982: 279) stated that the key to teaching gifted youth is to urge them forward and not hold them back. Since they enjoy the abstract and like to learn, the gifted pupils need plenty of opportunities to exercise their minds. In doing so, they can accept a great amount of the responsibility for directing and evaluating their own learning if the teacher gives them adequate guidance.

2.10 Questioning Skills and Responding

Wilén (1986: 5) defined a question as "any sentence having either an interrogative form or function". Questions are related to the content students are expected to learn. They focus student attention on information to be learned and on teachers' expectations about what students are to do and how they are to do it.

Questions are so prevalent in classroom teaching that it is hard to conceive of instruction without them. Researchers have studied the number of questions teachers ask and have concluded that approximately one third of classroom interactive instruction consists of teacher questions (Fisher et al., 1984: 96). A primary school teacher may ask approximately 150 questions per hour, while high school teachers may ask several hundred questions per day (Gage and Berliner, 1988: 35).

Several studies Carin (1997: 138), Hunkins (1979: 66), have shown that the frequency of questions is positively related to learning. A high frequency of questions often indicates that teachers are well organized and are pursuing academic goal or learning-related activities. Having a wide variety of questions that supplement lectures, recitations, and discussions also enhancing learning because more students get to participate and to be involved in learning activities (Good and Brophy, 1987: 102).

Purposes of Questions - Fisher et al (1984: 107) have reported that the early research on questioning was based on the assumption that questions were related to the content to be learned and to the level of thought required to answer. Current research efforts, however, focus on four main functions or purposes of questions,

which are: instructing, encouraging student participation, managing the classroom, and assessing learning.

Instructional questions may focus students' thinking on one topic or a particular aspect of a topic. These questions may be at different cognitive levels. Questions that focus student thinking may:

- Orient students to content objectives, procedures, and affective aspects
- Consolidate previously learned material
- Control shifts in topics to keep a discussion on track
- Initiate a discussion based on previous learning.
- Introduce or clarify the major concepts or ideas of a lesson.
- Review previously learned material (Stiggins, 1986: 57).

Farrar (1987: 64) states that "focusing questions" are usually considered to be convergent since they converge on one idea, thought or conclusion that has been predetermined by the teacher. Teachers also use questions that ask students to seek new ideas or information. These extension questions can be at one cognitive level or can gradually raise thinking to higher levels. They are usually divergent in nature since they encourage students to produce several answers or to consider information from different perspectives.

How does one encourage students questions? Hunkins (1979: 207) answered this question briefly "By welcoming them!" By continuing his remark, he said, if you encourage a free, permissive atmosphere in which youngsters know that they and their opinions will be respected, you can expect student questions to increase.

Not all student questions are as important as others. Some questions are so important that if the class is interested, it would be wise to depart from the agenda and consider the question in detail, even if it is not exactly pertinent. Others are of little importance and can be answered very briefly. Some questions are so trivial that they have no place in the class at all. If the student asking the trivial questions is sincere, answer the question but briefly (Gall, 1978).

The skilful questioning of a class performs a number of important functions. Educationally, one function of questioning is to elicit information. It may help to revise earlier learning; or consolidate recent teaching and learning. More than this, however, questions should have teaching value, that is, in asking the question, a teacher is helping the pupil to focus and clarify.

Unfortunately, research indicates that most beginning teachers as well as experienced teachers do not use effective questioning techniques. Ever since Socrates, teaching and questioning have been viewed as integrally related activities. In order to be an effective teacher, one must be an effective questioner.

As Roger (1989:62) has explained, the first step in effective questioning is to recognize that questions have distinct characteristics, serve various functions, and create different levels of thinking. Some questions require only factual recall; others cause students to go beyond memory and to use other thought processes in forming an answer.

Both kinds of questions are useful, but the heavy reliance teachers place on the factual type of question does not provide the most effective learning environment. Learning the different kinds of questions and the different functions they serve is a crucial step in being able to use all types of questions effectively.

Bloom's Taxonomy is probably the best-known system for classifying educational objectives as well as classroom questions. There are six levels of the cognitive domain of Bloom's Taxonomy, and questions at each level require the person responding to use a different kind of thought process. Teachers should be able to formulate questions on each of these six levels in order to encourage their students to engage in a variety of cognitive processes. Before teachers are able to formulate questions on each of these levels, they first must understand the definitions of the six categories, and they must be able to recognize questions written on each of these six levels. The six levels are: knowledge, comprehension, application, analysis, synthesis, and evaluation.

Assessment- Although the terms measurement/evaluation and assessment are related, they are not synonymous. Measurement/evaluation usually involves, collecting information about our students through tests, checklists and worksheets (Carin, 1997: 124). Very often, measurement involves a score, grade or other numerical reading.

Assessment is a broader concept that involves your professional judgment, based on a variety of data such as measurement, our feelings and observations, student performance and other information we gather from the learning environment (Carin, 1997: 125).

Tobin (1986: 28) discussed assessment approaches in a clear and concise way. According to him diagnostic Assessment is useful before we start teaching material to discover what our students know and don't know about the topic to be explored and their misconceptions. We will use formative assessment during our teaching to discover what our students are learning (or not learning) and to supply us with feedback to modify our plans and teaching methods where needed. Summative assessment is used after we have taught the material to assess how much students have learned or not learned, assign grades in a measurement made, and share data with students and parents, and make judgments.

Teaching and assessment are mirror images of one another. Assessment guides instruction and vice-versa. Thus, assessment should be a continuous process to promote intellectual development.

2.11 Higher Order Learning: The New Directions of Teaching

The Concept of Higher Level Learning - Engaging students in higher-level learning is a complex task. Because assessing the level of thinking is complicated by the learner's prior knowledge, it is not always possible to tell the difference between lower and higher order thinking. Most scholars, however, do agree on the major attributes of higher-level thinking.

Newmann (1988: 5), defined higher order thinking by comparing it with lower order thinking:

Lower order thinking demands only routine, mechanistic application of previously acquired knowledge; for example, repetitive exercises such as listing information previously memorized, inserting numbers into previously learned formulae, or applying the rules for footnote format in a research paper. In contrast, high order thinking challenges the student to interpret, analyze, or manipulate information, because a question to be answered or a problem to be solved cannot be resolved through the routine application of previously learned knowledge.

Meta-cognition - Jones (1986: 9) defined metacognition as "thinking-about what one knows and how to control one's thinking process. If students are to take an active role in their planning, they must be able to plan, monitor, clarify, and revise their thinking. Paris and Lindauer (1982: 37) identified three common threads of research on metacognition: evaluation, planning and regulation. Evaluation occurs when learners assess their own current knowledge. Good students keep a constant check on their understanding by restructuring messages, asking questions, anticipating outcomes, and thinking about the other person's point of view. Planning occurs as students select strategies to meet the goals of the task. Regulation of learning refers to the constant monitoring of progress toward goals and a conscious effort by students to change the way they are trying to learn. In short, meta cognition is thinking about thinking.

Concept Formation - Concept formation is a foundation for other higher level thinking processes (Marzano et al., 1988: 42). Gage and Berliner (1984: 8) defined a concept as a general idea of a thing or class. Educators use the word "concept" to describe the way knowledge and experience are grouped or categorized. A collection of discrete objects or ideas is sorted mentally into classes based on certain criteria. Classes can then be sorted and recalled as single concepts instead of having to

remember each individual members of the group. Concept formation allows students to reduce and organize incoming information.

According to Sternberg (1997:102) students should be taught:

- key concepts
- fundamental principles or generalizations and
- methods of inquiry of the disciplines

When taught the structure of knowledge, students are not restricted to studying subjects just to find out what is already known. They can learn a process of investigation as well. They can learn the methods of inquiry of the disciplines and ask questions much as scholars do. They can engage in beginning levels of research, becoming young geographers, historians, chemists, biologists, and so forth. In the process, they can learn ways of thinking that will help them understand new ideas and solve intellectual problems throughout their lives.

Sternberg (1997:123-125) believed that the learning of the fundamental knowledge would produce greater student understanding, encourage students to inquire into issues and solve problems independently, enable them to transfer ideas learned in one situation to another, and help them learn how to learn. He said learning to learn "is critical for students who faced life in the era of information explosion". He urged teachers to make students problem solvers by putting them into situations in which they could use fundamental ideas to find meaning in the data they studied. He stressed that students should engage in a process of discovery.

Teaching Thinking - Educators say thinking skill is a uniquely human trait, that it is the most significant characteristic that separates humans from other forms of life, because human thinking is at a higher and more sophisticated level than that of other worldly creatures. These higher levels of thinking are described in many ways and often with highly specialized language. Some of the more common general labels are "critical thinking;" "systematic thinking," "theoretical thinking", and "abstract thinking". More specific terms that define particular aspects of thinking are conceptualizing, comprehending, computing, inferring, interpreting, analyzing, synthesizing, problem solving, generalizing, applying knowledge, and evaluating (Brophy, 1988: 277).

Myers (1998: 474) discussed the importance of skills in teaching thinking. In his words:

What actually happens inside the human mind when people think is a matter of much uncertainty, research, and debate. But despite a lack of certainty, educators and society in general believe that people need to learn to think effectively, that thinking is a skill that can be taught, and that schools should teach it.

Teaching skills of thinking accelerates mental development and makes students more autonomous, creative, and productive people. When people think, they have to think about something; and when they acquire knowledge, they also develop their ability to think. In short, learning knowledge and thinking skills are interdependent and mutually reinforcing. Therefore, the effective teaching of knowledge includes the teaching of thinking and vice versa.

Teaching Problem Solving - Problem solving and scientific inquiry are terms that describe a type of thinking in which people confront new information and situations as ideas to be explained or problems to be solved. Rothstein (1992:134) states that the

process begins with the assumption that humans are by nature inquiring beings who seek answers when explanations for puzzling situations are not readily apparent. This natural tendency motivates them to discover meaning in that which they do not understand.

As people pursue this process of discovering meaning, they seem to pursue intellectual paths that have a common pattern and a recognizable sequence. When people solve problems, they typically do the following:

1. Recognize the problem
2. Analyze it
3. Propose possible solutions
4. Test consequences of those possible solutions
5. Select a solution
6. Evaluate the selected solution (Carpenter, 1986: 504-5)

Shuell (1988: 118) reported that very young children use informal knowledge and systems to solve problems before they have any formal instruction. Schools have traditionally included problem solving in mathematics, science, and social studies classes.

Because problem solving is a type of thinking that involves skill, it can be learned, and people can improve through practice. Therefore, it can be taught in schools. To do this, teachers present problems to students and focus their attention on how the students think about the problem rather than on what they think. They use the students' natural desire to discover as motivation. They help students interpret the

problem in a way that makes sense to them, develop guesses or hypotheses about solutions, test them, and evaluate the results. They lead their students intellectually and encourage imaginative and resourceful thinking. They guide the students as they practice the skill.

Teaching Critical Thinking - With the development of critical thinking as the instructional goals, the student becomes more active and responsible and the teacher becomes less dominant. The teacher organizes and provides direction for student learning, but the student is an active rather than passive participant.

According to Glenn (1988: 28), analytic or higher order thinking skills are the central elements in the process of critical thinking. Students who become critical thinkers can view problems in different dimensions and consider problems in a larger context. They seek maximum information before deciding on a course of action. Rather than find quick and simple solution to complex problems, critical thinkers not only examine the particular problem as an individual issue but also consider it in the larger dimension of related issues.

Anderson (1987: 404) has identified the role of the teacher in cultivating the critical thinking of his students. He said in the critical thinking or inquiry model, the teacher is a guide, facilitator, and simulator. In essence, the teacher abdicates his/her position and empowers students. By empowering students, the teacher no longer monopolizes the learning process; thus, the term non-directed is often applied to the teacher's role. Students are free to explore. Evaluation focuses on the students' ability to internalize and apply content to other situations.

Critical thinking requires that students have independent access to the range of learning materials and research tools that they will need in their studies. Students likely will go beyond the school walls and secure resources and information from various community agencies.

Cultivating Creativity - A particularly interesting concern for learning has been centered on creativity, that is, the development of ability to produce something "unique", different, or original (Snow, 1989: 377). The relevance of artistic or creative classroom activities depends on whether creative learning is to encourage free expression for all or is aimed at identification and cultivation of individuals with unusual talent. Truly creative individuals should be identified early and given abundant opportunities to exploit their talent.

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

This study followed the descriptive survey method. The rationale behind using descriptive survey method was to get general picture regarding teacher's competence and deficiency in teaching the new high school curriculum. This approach was felt to help as a stepping-stone for a further in-depth study in the area. The dependent variable of this study was competence of North Shewa high school teachers in implementing the new curriculum. The independent variables can be grouped into three major categories: subject matter knowledge, pedagogical skills and psychological knowledge. Pedagogical or methodological skills can be further classified as lesson planning skill, lesson presentation skill, questioning skill and student performance assessment skills. Psychological knowledge also classified as motivation and individual differences treating skills.

3.1 Sampling

There are 9 high schools in North Shewa Zone. Among these schools (Fitcha, Muketuri, Kuyu, Gohatsiyon, Sheno and Chancho high schools were selected, because they are complete high schools (9-12th grades). The three high schools are (9-10th).

Due to the limited number of degree holders in the zone, availability sampling was used for teachers, high school principals, vice-principals, department heads and supervisors. Among the 257 teachers, only 67 teachers are degree holders.

Accordingly, 6 principals, 5 vice-principals, 18 department heads, 4 supervisors and 67 teachers were involved in the study.

Purposive sampling was used for students to include in the study those students who were high, average and low achievers in their academic performance. From my 15 years teaching experience, I have known that majority of the teachers usually go with the pace of brilliant students. Most of the time the ability and interest of average and lower achievers is not considered appropriately. As a result much care has been taken in representing the judgments of low, average and high achievers in the study. Accordingly, among 1311 preparatory program students in other words, from the total population, 89(20%) of students from the bottom (lower), 265 (60%) from the average and again 89 (20%) from the top were selected to reevaluate their perspective schoolteachers. The information about the students' performance was collected from the schools' rosters in a systematic way. Among 447 students 370 (84.74%) were boys and 74 (15.26) were females. Orientation and clarification was given on questionnaires to those students selected as sources of information for about 40 minutes in each school. The logic behind the selection of grade 11th and 12th students was that they better evaluate their teachers and manage the questionnaire.

Subjects

The subjects of this study were the high school teachers in North Shewa Zone (Oromiya). North Shewa was selected as the center of the study for two basic reasons. Firstly, the investigator is familiar with the study area since he has taught there and thus, it is hoped that he could secure adequate cooperation and assistance from teachers, instructional leaders and students with a limited time available at the

researcher's disposal. Secondly, such studies have never been carried out in the above study area.

Instrument of Data Collection

Questionnaire

Two kinds of questionnaires (open and closed ended) were prepared in English and Amharic to which to be filled out by respondents. The questionnaire prepared for instructional leaders has three parts. The researcher has got an agreement of the schoolteachers to be evaluated by instructional leaders. The first part of the questionnaire was prepared to collect information regarding subject matter knowledge of high school teachers in implementing the new curriculum. The second part was designed to evaluate teachers' ability in planning instructional tasks that establish higher order learning. In the latter case instructional leaders were requested to evaluate teachers ability in treating individual differences. Questionnaire for the schoolteachers consists of 8 questions related to teachers' classroom performances at school. In this context, teachers were requested to rate themselves their ability in implementing the new curriculum. The high school students were also given an opportunity to evaluate their perspective teachers ability in managing the learning process.

Classroom Observation Checklist

Structured classroom observation rating scale was developed by thoroughly examining review of literature. This instrument was designed to serve as a guideline for the observation of teachers' questioning skills and its purposes.

Interview

In order to substantiate the questionnaire, both structured and unstructured interviews (see Appendix –F) were made with all instructional leaders of the sample schools. The interview with department heads generally addressed to some problems encountered by the schoolteachers as they discharge their instructional duties. In general, the interview conducted with the department heads was aimed at strengthening the information obtained from the teachers and students.

Document Analysis

Based on Bloom's taxonomy, document analysis was made by the researcher to evaluate the ability of teachers in preparing examination. Accordingly 345 questions were analyzed.

3.2 Data Collection Procedures

Three types of questionnaires in English and Amharic languages were prepared. Three of them were designed to get a wider view from different sources. Three of them targeted directly or indirectly in identifying the teachers' strengths and weaknesses in classroom teaching. The pilot test was conducted in Sendafa High School. Based on the comments of senior colleagues and students of Sendafa high school, the questionnaires were refined and analyzed.

The questionnaires distributed to students were all in all close ended, whereas the questionnaires distributed to instructional leaders (principals, vice principals, department heads and supervisors) were both open and close ended. The instructional leaders evaluated their respective teachers in terms of academic knowledge,

pedagogical or professional skills and psychological knowledge by sitting together in a form of committee. The evaluation was carried out depending on points of references. The researcher from different educational literatures adapted these points of references.

Teachers were also asked through questionnaire to respond whether they have taken some basic professional courses during their college life or not. They were also asked to rate themselves in reference to knowledge of subject matter, pedagogical skills and psychological knowledge.

Classroom observation was made to collect data about the teachers "questioning skills". Six school subjects (English 11th, Mathematics 11th, Geography 11th, History 12th, Physics 12th, and Chemistry 12th) were selected to be observed. The rationale behind the selection of these six subjects were that mathematics and English language are common for both academic streams (natural and social sciences). Again it was planned to have equal representation for both streams by including two subjects from social science and also two subjects from natural science. The researcher observed each subject teacher for three periods on different days. Observation checklist was employed for data collection. To see the questioning skills of the teachers, 14 department heads were selected on the bases of purposive sampling. The department heads are senior in teaching and more experienced than the teachers. It was believed that department heads have better understanding about questioning skills rather than the teachers. Regarding department heads distribution in subject wise:

- ◆ Four department heads were from natural sciences (physics, chemistry and biology)

- ◆ Three from English language department
- ◆ Four from social sciences (geography, history, civic and ethical edu.) and
- ◆ Three from mathematics.

Document analysis was also made to get tangible information on how the teachers planned lesson and prepared examination. For both cases, checklist was used for information gathering. To analyze the data, percentage value was used in all cases, because of the nature of the study conducted. The research approach was more of qualitative (classroom observation, document analysis, open and close ended questionnaires and interview). The researcher used non-probability sampling in all cases to get a complete picture of some characteristics of the universe (population). The researcher believed that percentage is the best statistical tool to analyze this study. Thus, no need of using other statistical tools.

Methods of Data Analysis

The analysis and interpretation of this study was based on the data collected from the questionnaires, observation and document analysis. 67 copies to teachers, 33 copies to instructional leaders, and 447 triple copies were distributed to students. Even though a sort of orientation was given to students, three students did not appropriately complete the questionnaires and hence, the questionnaires were discarded. The data were analyzed in accord with each questionnaire component. Responses were tallied and frequencies were calculated in percentages. Responses to open ended questions were grouped into similar idea. Descriptions and interpretations were also presented immediately after each table.

CHAPTER FOUR

4. PRESENTATION AND ANALYSIS OF DATA

This part of the study deals with describing, analyzing and interpreting data that obtained from questionnaires, classroom observation, document analysis and interviews of the basic questions posed in chapter one. All the basic data pertaining to the variables are summarized in the form of tables.

Table 1: Characteristics of the respondents

No	Items	Category of the respondents			Total No	%
		Teachers	Instructional leaders	Students		
1	Sex					
	a. male	59	32	370	461	84.74
	b. female	8	1	74	83	15.26
	Total	67	33	444	544	100.00
2	Age: students					
	a. 18-25 years	-	-	444	444	100
	Age: Teachers& instructional leaders					
	a. 18-25 years	-	-	-	-	-
	b. 26 – 30 years	2	-	-	2	2.00
	c. 31 – 35 years	5	10	-	15	15.00
	d. 36 – 40 years	42	18	-	60	60.00
	e. 41 and above	18	5	-	23	23.00
	Total	67	33	-	100	100
3	Years of service in teaching:					
	a. 1-10 years	4	2	-	6	6.00
	b. 11-20 years	16	11	-	27	27.00
	c. above 21 years	47	20	-	67	67.00
	Total	67	33	-	100	100
4	Years of service in administration position (director, vice director department head, and supervisor)					
	a. 1-5 years	-	7	-	7	21.21
	b. 6-10 years	-	15	-	15	45.45
	c. 11-15 years	-	7	-	7	21.21
	d. above 16 years	-	4	-	4	12.12
	Total	-	33	-	33	100
5	Teaching load per week:					
	a. 1-9 periods	13	4	-	7	7.45
	b. 10-20 periods	41	23	-	64	68.10
	c. 20-30 period	23	-	-	23	24.45
	Total	67	27	-	94	100

As table 1, item 1 shows, out of 544 respondents 84.74% were male. Female respondents count only 15.26%. According to the data obtained, female teachers and students are very few in number. The female bias which was used to discourage females from going to schools can be the major reason for low number of female teachers and students.

Regarding to age, 100% of students are between 18-25 ages category. The majority of teachers and instructional leaders belong to 36 to 40 ages category. Those whose age is above 41 yeas make 4.23%. If we consider those below the age of 30 as young with insufficient experience and those above 40 as those with old age, the overwhelming majority (60.00) are in the age of thirty's.

With regard to their years of service 67.0% of the teachers reported that they have served for above 21 years. About 27% of teachers have served for 11-20 years and nearly 6% indicated that they have served for less than 11 years. The data on the years of service clearly show that the majority of the teachers and instructional leaders in the schools of North Shewa zone have long years of experience. Therefore, we may tend to believe that the majority of these teachers have rich experience to explore educational problems.

As item 4 in table one shows, 45.45% of the instructional leaders have served 6-10 years in administration positions. Surprisingly 12.12% reported they have served in administration position above 16 years.

As it is indicated in table 1 item 5, about 68.10% of the respondents reported that they teach 10-20 periods in a week and 24.45% indicated that they teach 20-30 periods in a

week. In this case, it is possible to say that the majority of the teachers have time to read books, educational literature, to investigate instructional problems, to improve their teaching methods and to participate actively in innovative activities if they have a sense of professional dedication.

Teachers Subject Matter Knowledge

Command of the subject matter is absolutely essential in any level of teaching. Teachers who are not knowledgeable and comfortable in their content are usually dull, boring and ineffective. The research question to be managed in this section was to know whether teachers are knowledgeable in subject matter or not. The school leaders (principals, deputy-principals, supervisors and department heads) were asked to rate teachers academic excellence based on the following criteria:

- in making explicit instructional objectives
- in making clear difficult concepts
- in giving concrete and ample examples
- in organizing a body of knowledge
- in emphasizing main points
- in answering questions clearly and
- in relating new knowledge to prior knowledge and experience.

(Adapted from Blue's book, 1986 p. 72-73)

Table 2: Instructional leaders rating of the teachers' academic knowledge

Subject (s)		Knowledge level of teachers in their respective subjects you have observed				
		Very good	Good	Average	Poor	Very poor
1. Mathematics		10	2	1	-	-
2. Language (English)		9	1	1	-	-
3. Natural sciences (physics, chemistry and biology)		26	1	2	-	-
4. Social Sciences (geography, history and civic education)		12	-	1	1	-
Total	No	57	4	5	1	-
	%	85.07	5.97	7.46	1.50	-

Table 2 reveals that the great majority of teachers (85.07%) were rated "knowledgeable" in the subject matter they were teaching. Only (7.46%) and (1.50%) were rated "average" and "poor" respectively. This finding tell us that all teacher training colleges have given adequate attention in establishing sound academic knowledge during the training years.

Knowledge of the subject matter is universally considered an essential attribute for effective teaching and successful learning. In every classroom, it is critical that the teacher evaluates resources and curriculum materials for their comprehensiveness, accuracy and usefulness for presenting particular ideas and concepts. Subject matter knowledge would be essential for the selection and evaluation of curriculum materials.

Teachers' Pedagogical and Psychological Skills

Teaching requires that its practitioners clearly understand what should be done to bring about the most desirable learning in students and be highly expert in the skills necessary to carryout these tasks. These skills includes a sound knowledge of the

strategies and techniques available, the ability to select and use subject matter, familiarity with the nature of the learner, and an understanding of learning theory and its application.

Table 3: Teachers' skill in general teaching method, subject area methodology and psychological knowledge

The teachers were asked whether they are familiar with some basic professional skills or not (N = 67)

No	Skill items	Respondents		
		No	%	
1	Have you taken a course in general teaching methodology?	Yes	67	100
		No	0	-
2	Have you taken a course in subject area methodology?	Yes	67	100
		No	-	-
3	If yes in question item 1 and 2 have you applied multiple instructional strategies in your class?	Yes	-	-
		No	67	100
4	If no, please write the problems in detail _____ _____			
5	Are you well familiar to human development and learning theories (psychological knowledge)?	Yes	12	17.91
		No	55	82.09
6	Have you advised your students how to study the subject matter?	Yes	42	62.69
		No	25	37.31
7	Have you taught your students how to take notes?	Yes	51	76.12
		No	16	23.88
8	Are you competent enough in planning instruction?	Yes	67	100
		No	-	-

As table 3 reveals, 100% of the teachers have taken general and specific subject area methodology courses, but 82.09% of teachers are not familiar with psychological knowledge/learning theories. Although all teachers have taken courses in teaching methods, all teachers did not use multiple instructional methods to make their lessons more interesting and vivid. 100% of respondents reported they are proficient in instructional planning. To be sure, the researcher made document analysis regarding instructional planning. The major points of references for this evaluation were how behavioral objectives were written, sequence of learning activities, materials needed and evaluation procedures. According to the document analysis that was undertaken by the researcher, all teachers have excellent skill in writing general and specific objectives. General objectives of both the cognitive and affective domains were written in terms of covert behavior whereas general objectives in the psychomotor domain were written in terms of overt behavior. Specific behavioral objectives were written in terms of observable and measurable behavior in all of the domains.

Instructional plans will, at minimum, address curriculum expectations, characteristics of the learners (knowledge, skill, attitude), assessment procedures, structure and organization of the classroom, learning activities and instructional materials to support the learning process. Even though the teachers reported as they were competent in planning instruction, except general and specific objectives, the rest elements of instructional planning were not seriously considered and planned by all teachers.

What some one can conclude from table 3, item 3 and 5 is that all high school teachers are traditional teaching method oriented, they couldn't apply all the methods they learnt. Long (2002: 84) reported that high school teachers tended to use the same

methodology regardless of whether a class is large or small, that is, they lectured. The major reasons they raised for their stereotyped teaching method were:

1. Lack of practical skills in applying various methods
2. Shortage of laboratory facilities and equipment
3. Lack of library facilities
4. Large number of students in the class
5. Students unwillingness to invest great amount of "mental effort" on their lesson
6. Vastness of subject content against time allocation.

The respondents have raised about six points as major obstacle for effective classroom teaching. In fact, problem Number 2, 3 and 4 were beyond the control of the teachers but the others could be managed by skillful approaches. It is true, that teachers deal daily with many complexities including differences among their students in terms of abilities, attitudes and learning preferences. To accommodate these differences, teachers must learn to teach in ways compatible with individual learning styles and to adapt teaching strategies and techniques suitable to different teaching objectives and the group being thought. It is clear that no routine teaching approach can effectively meet all these needs. Learning for understanding often requires experimentation, problem solving, collaboration and manipulation of physical objects. Thus, teachers need models of teaching that include inquiry learning, cooperative learning, concept attainment and class discussion.

The teachers reported that students were passive in class; they were not willing to participate actively in learning and they expected teachers to feed them with information. As to the researcher, students can be helped through discussion, especially in small groups, by providing models and examples, by breaking down

problems, by asking about students' individual contribution to group work, by asking students' whether they agree or disagree with their group's conclusions etc...

In short, teachers are required to convince their students that their role is not just to absorb or copy input but also to actively participate in learning and construct their own meaning from each lesson. The teachers also complained vastness of the subject content against time allocation. It is possible to conclude that one of the worst disease in Ethiopian education is the belief of so many high school teachers that they must cover the subject. Usually covering the subject results in the student's learning nothing about much, or at best a little about a lot. One cannot teach students everything on any subject. Thus, he must limit his courses to the most important points. He does not have time for marginal topics. Therefore, teachers who teach for understanding and higher order applications of the subject matter should limit what they try to teach by focusing on what they see as most important and structure what they do teach around important ideas and elaborate it considerably beyond what is in the text. The purpose of teaching is the development of thinking than acquiring knowledge in terms of facts. Pupils cannot learn all the facts and information that are presently available. What is important is that they develop structures to understand, integrate and transfer knowledge.

Table 4: Summary of teachers Self Rating (N = 67)

No	Items	Rating									
		Excellent		Very good		Good		Poor		Very poor	
		No	%	No	%	No	%	No	%	No	%
1	Your ability in making lesson objectives clear	2	2.99	16	23.88	49	73.13	-	-	-	-
2	Your knowledge of the subject matter	65	97.01	2	2.99	-	-	-	-	-	-
3	Your ability in organizing the lesson	26	38.81	41	61.19	-	-	-	-	-	-
4	Your command of the instructional language	4	5.97	56	83.58	7	10.45	-	-	-	-
5	Your ability in stimulating thought provoking questions regularly			6	8.96	12	17.91	49	73.13	-	-
6	Your ability in imparting a great deal of new knowledge	3	4.48	3	4.48	61	91.04	-	-	-	-
7	Your ability to use varieties of teaching methods/strategies	-	-	-	-	8	11.94	59	88.06	-	-
8	You ability in relating lesson to students personal experience and real world situations					4	5.97	63	94.03	-	-
9	Your ability in treating individual differences	-	-	-	-	-	-	67	100.00	-	-
10	Your ability in motivating students to learn by themselves more and more	7	10.45	21	31.34	39	58.21	-	-	-	-
11	Your ability in organizing instructional activities which promote high order thinking			2	2.99	18	26.86	47	70.15	-	-
12	Your ability in preparing test/examinations based on table of specification	1	1.49	10	14.93	56	83.58	-	-	-	-

It is observable that 97.01% of the teachers rated themselves "excellent" in their knowledge of the subject matter. 73.13%, 88.06%, 94.03%, 100.00% and 70.15% of the respondents rated themselves "poor" in stimulating thought provoking questions, in using varieties of teaching methods, in relating lessons to students personal experiences and real world situations, in treating individual differences, and in

organizing instructional tasks that advance higher order thinking respectively. The great majority of the teachers (73.13%, 91.04%, 58.21% and 83.58%) rated themselves "Good" in making clear lesson objectives, in giving a great amount of new knowledge, in motivating students to learn more and in preparing tests respectively. Large number of respondents (61.19% and 83.58%) rated themselves "Very good" in organizing the lesson and in command of instructional language respectively.

Teachers' Ability in Establishing Higher Order Thinking

The students were also given an opportunity to appraise the classroom teaching. It was also important collecting relevant information from students to what extent English, mathematics and civic and ethical education teachers are competent enough in some basic professional skills. These disciplines were selected for the study because, they are common for both natural and social science students. Accordingly, the students appraised high school teachers.

Table 5: Summary of students' evaluation of the teachers teaching approaches (No= 444)

No	Aspects	Ratings									
		Excellent		Very Good		Good		Poor		Very poor	
		No	%	No	%	No	%	No	%	No	%
1	The teacher's explanation of lesson objectives	14	3.15	93	20.95	316	71.17	21	4.73	-	-
2	The teacher's ability to clarify materials that need explanation	23	5.18	340	76.58	65	14.64	16	3.60	-	-
3	The teacher's ability to ask easily understood questions	29	6.53	412	92.79	3	0.68	-	-	-	-
4	The teacher's ability to ask thought provoking questions	28	6.31	9	2.03	102	22.97	305	68.69	-	-
5	The teacher's ability to get students participate in class activities	13	2.93	20	4.50	17	3.83	394	88.74	-	-
6	The teacher's ability to summarize before moving on to a new topic	7	1.58	22	4.95	29	6.53	386	86.94	-	-
7	The teacher's ability to use a variety of teaching techniques	-	-	3	0.68	32	7.21	409	92.12	-	-
8	The teacher's selection of materials and activities that are thought-provoking	15	3.38	32	7.21	16	3.60	381	85.81	-	-
9	The teacher's ability to structure lesson content in creative and vivid ways	37	8.33	64	14.41	340	76.58	3	0.68	-	-
10	The teacher's flexibility in offering options for individual students	8	1.80	10	2.52	1	0.23	425	95.72	-	-
11	The teacher's ability to take appropriate action when students appear to be bored	6	1.35	27	6.08	336	75.68	75	16.89	-	-
12	The teacher's ability to relate the subject matter to other academic disciplines and real world situations	-	-	61	13.74	10	2.25	373	84.46	-	-
13	The teacher's ability to get students to challenge points of view raised in the lesson.	16	3.60	22	4.95	346	77.93	60	13.51	-	-

71.17%, 76.58%, 57.68%, 77.93% students rated their teachers "Good" in explaining lesson objectives, in structuring lesson content, in motivating students, and in getting students challenge points of view raised in the lesson respectively. Again, 68.69%, 88.74%, 86.94%, 92.12%, 85.81%, 95.72% and 84.46% rated their teachers "poor" in asking thought provoking questions, in encouraging students to participate in class activities, in summarizing lesson before moving on to a new lesson, in using variety of teaching methods/strategies, in selecting thought-provoking materials and activities in treating individual differences, in connecting subject matter to other disciplines and real world situations respectively. The teachers were evaluated "Very good" in clarifying materials that need explanation and in making their questions understandable (76.582% and 92.78% respectively). Surprisingly, teachers were rated between "Good and poor". The student evaluation result tells us a great number of teachers were not ready to practice the new direction of teaching. This is likely because of knowledge and skills gap or lack of commitment on the part of the teachers.

The mission of schools is shifting from preparing students for specific vocations to enabling them to participate in social, economic and political decisions. In a complex and rapidly changing world, it is essential for students to develop critical thinking skills and to learn how to assimilate and process large amounts of information. One of the most important skills for students to acquire is learning how to learn.

Teachers' ability in establishing conducive learning environment to promote higher level thinking was measured in planning instructional tasks that move students to define problems, to give sound justifications, comparing and contrasting relationships, inferring, predicting, establishing criteria, and verifying. It is believed that these

instructional tasks can provide ample opportunities for students to practice higher level learning skills.

Table 6: High school teachers' ability in establishing higher level thinking of learners as rated by instructional leaders

Teachers and their subjects	How often does the teacher plan instructional tasks to develop a higher order learning in their respective discipline (creative, critical and problem solving)?									
	Frequencies									
	Very often		Often		Sometimes		Not at all		Total	
	No	%	No	%	No	%	No	%	No	%
Mathematics teachers	-	-	1	3.03	4	12.12	28	84.85	33	100
Natural sciences (physics, chemistry and biology) teachers	-	-	1	3.03	2	6.06	30	91.0	33	100
Language (English) teachers	-	-	-	-	1	3.03	33	96.97	33	100
Social sciences (Geography, history and civic education) teachers	-	-	2	6.06	3	9.10	28	84.85	33	100

As Table 6 shows nearly all the high school teachers were not in a position to plan instructional tasks that advance higher-level thinking. Students have been seen as passive, empty receptacles that can be filled with facts and bits of information. Students need to learn how to screen new information critically in order to determine its worth and applicability to the problems that they will be expected to solve. But the teachers were not ready to facilitate learning and move their students for higher order learning. Almost all teachers were rated "Poor" in planning instructional tasks in a way it advances higher order learning.

No two students are the same. They differ in a number of ways-in physical make up, interests, ability, aptitude, home background, experience etc. Educational practice, to be effective, must be rooted in a rapidly advancing research and theory of human development and learning.

from Sheno, geography from Chancho, history from Kuyu, physics from Gohatsiyon and chemistry from Muketuri high school. All questions were the same in number (N =60) for each subject, except physics questions (N = 45). The interpretation of the document analysis is given on the next page.

Table 9: A specification grid analysis of teacher – made question in 6 subjects

	Specification	Subjects											
		English		Mathematics		Geography		History		Physics		Chemistry	
		No	%	No	%	No	%	No	%	No	%	No	%
Lower order cognitive questions	1. Knowledge												
	1.1 Define	-		-		2	3.33	-	-	3	6.67	4	6.67
	1.2 Recall (who, what, where, when)	6	10.0	3	5.0	49	81.67	52	86.67	15	33.33	32	53.33
	2. Comprehension					5	8.33	-	-				
	2.1 describe	-								2	4.44	1	1.67
	2.2 compare and contrast									2	4.44	5	8.33
	2.3 rephrase	5	8.33										
	2.4 explain the main idea									1	2.22		
	3. Application												
	3.1 apply	39	65.0	20	33.33					9	20		
	3.2 classify					3	5.0					9	15.0
	3.3 use									1	2.22		
3.4 solve			25	41.67					8	17.78			
3.5 how many? Which? What is?	10	16.67	10	16.67	1	1.67					3	5.0	
Total number of lower order cognitive questions	60	100	58	96.67	60	100	52	86.67	41	91.11	54	90	
Higher order cognitive questions	4. Analysis												
	4.1 identifying causes							8	13.33			2	3.33
	4.2 draw conclusion			-	-			-	-	1	2.22	4	6.67
	4.3 why?			2	3.33					1	2.22	6	10
	5. Synthesis												
	5.1 predict												
	5.2 design												
	5.3 What would happen if?									1	2.22		
	5.4 How can we solve												
	6. Evaluation												
	6.1 argue									1	2.2		
	6.2 give your opinion												
6.3 evaluate													
Total number of higher order cognitive questions	-	-	2	3.33	-	-	8	13.33	4	8.89	6	10.00	

As table 9 indicates, 100% of English language questions were lower order cognitive questions (that all for simple recall of information). Similarly, (96.67%) of mathematics questions were also lower order cognitive questions. 100% of geography questions

were purely factual questions. Similarly 86.67% history questions were memory questions. 41 (91.11%) physics questions and 54 (90%) chemistry questions were convergent questions (thought questions for which there is a single answer). It is possible to conclude that a great number of teachers-made questions were limited to simple recall, comprehension and application levels.

These memory questions assess only a superficial and shallow understanding of contents. Parroting someone else's thoughts does not, in itself, demonstrate any real understanding.

Analysis questions are a higher order questions that require students to think critically and in-depth. A student cannot answer an analysis question by repeating information. Students cannot rely directly on instructional materials when answering an analysis question.

Synthesis questions ask students to perform "original" and creative thinking. These kinds of questions require students to produce original communications, to make predictions or to solve problems. Although application questions also require students to solve problems, synthesis questions differ in that they do not require a single correct answer but, instead, allow a variety of creative answers.

Evaluation questions do not have a single correct answer. They require the student to judge the merit of an idea, a solution to a problem. They may also ask the student to offer an opinion on an issue.

Unfortunately, the teachers almost avoided higher order cognitive questions in favor of lower order ones, especially memory questions. But analysis, synthesis and evaluative questions are also very important because they foster critical and creative thinking in students.

Summary of Interview Responses of High School Teachers, principals, Deputy Principals, Supervisor and Department Head (N = 67)

Points of interview that conducted with the schools' department heads

1. What kinds of teaching methods do your schoolteachers employ usually?
2. What are the major problems for not using varieties of teaching methods?

3. What are the peculiar weaknesses of English language teachers in teaching the language?
4. What are the major weaknesses of your schoolteachers in teaching social sciences?
5. What are the major weaknesses of your schoolteachers in teaching science subjects?
6. In your opinion, which kinds of teaching method(s) is/are more promising for promoting higher order thinking?

As mentioned earlier deputy principals department heads and supervisors of Fitch, Gohatsiyon, Muketuri, Chanco, Kuyu and Sheno high schools were interviewed and gave their suggestions and views regarding the success and failures of high school teachers in their professional skills. The first question addressed to the respondents was "what kind of teaching method do your teachers employ usually?"

Their responses were exactly one and the same. They reported that "lecture method is the dominant teaching method" in their respective schools. In order for teachers to respond to current and future expectations effectively, they need to have a range of teaching strategies they can draw on to provide the best possible learning opportunities for their students.

They were also asked to identify and list down the major and common problems hindered them from using varieties of teaching methods. The major and common problems they have listed were:

1. Large class size.
2. Lack of financial support for equipping laboratories.
3. Lack of commitment on the part of teachers and being change resistant.
4. The absence of adequate library facilities.
5. Inadequacy of periods allotted.
6. Inadequacy of pre-service and in-service training of teachers particularly in pedagogy and psychology area.
7. Low interest of learners to work hard.

The third question: was designed to identify the major causes for English language crisis in schools. The school managers were asked to indicate the peculiar

weaknesses of English language teachers in teaching the language. The English language teachers were criticized by 27 (81.8) of interviewees for:

- "Translating the language into the vernacular (mother-tongue) where the medium of instruction was English".
- "Trying to teach students how to write by teaching them grammar, and how to reason by memorizing rules and facts".
- 'Not preparing local curriculum according to their students age, ability and environment". They reported by saying "They always teach students the book assigned to the grade but not according to their level of understanding.

As to the researcher, the comments are logical and sound because what is to be done must be learned by practice. Language teachers in schools, therefore, let the students learn to write by writing, to listen by listening, to talk by talking, to reason by reasoning etc.

The fourth question: "what are the major weaknesses of your school teachers in teaching social sciences (Geography, History and Civics)?" Many weaknesses have been raised. The convincing points for all the three subjects were:

- Teachers do not use maps, globes, charts and graphs.
- Teachers do not help student to locate, gather, organize and analyze information from various sources such as books, newspapers, and the library.
- Teachers do not teach how to infer cause-effect relationships, draw conclusion based on evidence, how to distinguish facts and opinions.
- They do not train their students how to reason dialogically (arguing both for and against one's position on an issue).

- They give little attention for map and globe reading and interpretation, data evaluation, chart and tables interpretation.

If we want students to develop critical habits of mind, such as judging whether conclusions are supported by evidence and making sense of historical events; then we must teach them the process and spirit of inquiry: making and testing hypotheses, respecting facts rather than prejudices.

The fifth question: "what are the major deficiencies in teaching natural sciences and mathematics in your school on the part of the teacher?" Majority of the respondents 19 (57.7%) first suggested the nature and teaching methods of the subjects and finally identified some teacher-related problems as follows.

"The nature of science and mathematic courses suggest certain teaching procedures that are particularly appropriate. These are observation, experimentation, discovery, laboratory work, demonstration, research projects and field trips" they said.

By continuing their explanation, they said "science is a doing subject. Students need opportunities to solve problems to discover and test ideas. These opportunities cannot provide by merely reading about science". They reported some "so-called experiments" were not true experiments. So often, students merely verified conclusions that were known beforehand. Such a "cookbook" method of doing experiments, in which blanks were filled were common in the schools. They also reported that many mathematics teachers concentrate on procedural knowledge. This resulted in superficial analysis of the problems because few teachers took the time to link these procedures to concepts. Computational skills were emphasized in

mathematics instruction. Teachers for higher order thinking skills, understanding mathematics as a discipline, allocated little time. They taught their students how to get correct answer by merely inserting formulae.

In short, the opportunity to make open-ended experiments, to apply science concepts and principles, learning to plan investigation in science and solving problems was given inadequate attention.

Question item number 6 was designed to test whether the teachers have adequate theoretical and practical knowledge on varieties of teaching methods. In other words, it was asked to check whether the teachers' professional skills particularly knowledge of teaching methods is dependable or not.

Surprisingly, the great majority 36 (53.73%) of respondents favored lecture method, recitation, discussion and problem solving for the development of higher order thinking. 17 (25.37%) of the respondents identified case study, problem solving, discovery and discussion as better methods for higher level thinking development. Whereas 11 (16.42%) considered all of them as important for higher order thinking. 3 (4.48%) of respondents reserved to respond.

The respondents' responses tell us that the majority of the teachers do not have in-depth theoretical knowledge and practical skill on different items of teaching methods. Most likely, their knowledge in teaching methods area is superficial. It has been proved through this systematic question that the teachers have remarkable confusion even in differentiating the peculiar purposes of these methods. This could be a real crisis in our

education system. In short, methods- related revolution is non-existent in these studied high schools.

How well we use any teaching technique depends on how well we have developed or perfected our teaching skills. However, we can never predict or guarantee how effective any individual teaching method can be, because each student has a unique learning style and other classroom or environmental variables can affect teaching and learning. That is why we should plan for as wide a variety of teaching/learning techniques as we can. Not using these varieties of methods have great negative impact on the holistic development of the learners.

According to the New Education and Training Policy, high school teachers are expected to have first degree in teaching. On the contrary, more than 2/3 of the high school teachers are diploma holders. The teachers are expected to have dependable pedagogical and psychological knowledge to manage effectively the teaching learning process. But, as the research result revealed, almost all teachers didn't attempt to apply their pedagogical and psychological knowledge in the schools.

CHAPTER FIVE

5. SUMMARY CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary, conclusion and recommendations of the study.

5.1 Summary

The most effective teachers really believe that they are responsible for developing positive student attitudes toward learning. They plan their teaching on the basis that all students will succeed. They carefully monitor their own instructional behavior so that they can be sure that what they are doing will produce desired outcomes. They never stop searching for ways to improve their teaching. They spend a significant amount of time getting to know their students so that they understand their learning motives. These teachers also carefully assess their students so that they know what skills and knowledge they have acquired in their prior learning experiences. They really believe that they can help all students learn. They usually convince students that they too can be successful. Moreover, they are flexible, model what is to be learned and set appropriate goals. Their lessons have a clear instructional focus. They know how to question and motivate students. They have good communication and management skills. In short, they are directors of learning and counselors of students.

The main objective of this study was to evaluate the status of subject matter knowledge and professional skills of teachers in selected secondary schools of North Shewa zone and to recommend possible solutions for the problems identified. In the course of study, the researcher has tried to answer the following basic questions.

1. Do high school teachers have adequate knowledge in their subject?
2. Do high school teachers use varieties of teaching methods/strategies?
3. To what extent high school teachers treat individual differences?
4. What are the major weaknesses of the high school teachers in teaching their subjects?

As it is mentioned earlier, the descriptive survey method was employed for this research. Available and purposive sampling techniques were used for data collection.

In surveying the problem under study, the following major findings are secured.

1. The teachers' self-rating (97.01%) and instructional leaders evaluation asserted that the great majority (85.07%) of high school teachers are knowledgeable in their subject. Knowledge gives us confidence and raises self-esteem. It also enables us to become better thinkers and doers. In England, by James, most subject teachers have been studied (1979: 268-69). The result indicated as the teachers in their subject have in depth knowledge and confident, as they also well understood the process involved in learning their subject help students. The findings of the researcher is similar with the finding of James regarding knowledge of subject matter but quite different in helping students learn how to learn.
2. High school teaching is highly lecture-oriented. The teacher emphasized the importance of structural lesson in which presentation of new information is followed by student practice and teacher feedback. Majority of the teachers set the same type of teaching/learning activity all the time. 88.06% of the high

school teachers confirmed as they usually employed stereotyped teaching method. Similarly 92.12% of students witnessed the same thing. It was verified by researcher Show (1988: 147-148) effective teachers can foster development of higher level thinking as they focus instruction on the key attributes of the cognitive operations that constitute thinking, model the use of thinking process and provided guided practice. The teachers that were studied by the researcher lacked this essential quality.

3. Individual difference is totally neglected or ignored by the schoolteachers; little attention is given to meet the wide range needs of learners. 100% of the high school teachers confirmed as they did not treat individual differences in learning. The evaluations that were made by students and instructional leaders are also similar with teachers' self-rating. According to Roger (1981: 222), effective teachers plan learning experiences that ensure student success. They are skillful in assessing students' abilities and challenging students with learning objectives at the appropriate level. Frank (1982: 138) shared similar view with Roger. He stressed the importance of treating individual differences by saying "all subject teachers are required to identify students with particular needs, to gather evidence and to provide differentiated learning, to address learner's difficulties". The opposite is true in treating individual differences in the schools the researcher investigated.
4. English language teaching focused on grammar and comprehension even though extensive curricular reform has been made. They translated English language, the medium of instruction, into vernacular. Mathematics teaching became procedural and mechanical, a series of operations without purpose and

deep understanding. Even biology, the study of life itself, decayed into a recitation of taxonomies. Few experiments were conducted in laboratories for close-ended questions rather than divergent questions. History teaching highly emphasized on revolutions, wars, dates, names, deprived of connections to teach other or the present day. With 15 minutes breaks, students move from one forty minutes lecture to the next 5 periods in a row. Teachers talked, student listened. Forty-minute periods favored one teaching method (lecture). The great majority of teachers (70.15) also confirmed by self-rating as their ability is "poor" in planning and organizing instructional activities which promote higher order learning. As table 7 reveals, 52.61% of classroom questions were planned to develop lower cognitive memory. Only 1.42% were to develop the ability to think.

In short, teaching in the high school is highly characterized by teaching method that is not conducive to student learning:

- a. Whole class instruction emphasized teacher lectures. In the constrained 40-minutes class period, teachers force-feed isolated bits of their subject, deprived of meaning and application in the world outside the classroom.
- b. Students often copy from the textbooks and sometimes duplicate the textbooks.
- c. A few opportunities are provided to students to ask question or participate in the teaching learning process.
- d. Little on going monitoring and assessment of student learning.

and ideas, and successful students learned them either by rote memory or through some higher levels of thinking. Students with average potential typically sat at their desk, which were usually in rows facing the teacher, listened to the teacher and, took notes; slow learners might be socialized with each other or day dreamed.

5.3 Recommendations

1. The teacher's role as a dispenser of information has to be reduced and his role in stimulating thinking has to be enhanced. It is better if teachers give students many opportunities to find out for themselves; initiate to do open ended laboratory and library work; encourage students to gather information, classify, predict events, construct hypotheses, experiment, solve problems and make decisions, balance "hands-on" experiences with thought-provoking activities; put students in a position of digging up information and determining cause-and-effect relationships. It is expected from teachers to plan instructional tasks that require a higher level of cognitive processing such as defining problems, setting goals, comparing, classifying, inferring, predicting, establishing criteria, verifying etc.
2. The teacher who feels his job is only to fill the youngsters heads with his subject, misunderstand his task. The teacher must deal with the entire personality. Teacher as a facilitator, guide, a director for thinking when thinking becomes the focus of classroom teaching, the teacher should reduce his reliance on teaching as "telling" and increase his effort in planning the management of learning projects. A great deal of teacher's effort should goes into designing work for students to do, aiming for products or performances that will expand their intelligence.

3. Most of teachers' training colleges have started to train their prospective teachers upto the expectations of the new education and training policy. This is an encouraging beginning. Most likely, it would be hopeful if all teachers training colleges target and reexamine their training programs to perfectly address the following important questions: what should teachers know and be able to do? Who should be selected for professional preparation? What knowledge and skills should all teacher candidates be taught? What values, attitudes and convictions should they possess? What pedagogy should be used? What preparation should teachers have in order to work with other professionals and how curriculum can be designed, implemented and evaluated? These basic questions should be taken as minimum requirements to get a ticket for bachelor degree in teaching.
4. Teachers cannot be trained fully and for life during initial teacher training. Thus, constant life-long training for teachers is very essential. Life-long education is the simplest and most effective way of rapidly spreading the principles of school reform and innovation. So it is advisable including life long training for high school teachers as a priority item in education policy. Besides on their part, teachers are expected to expand and revise their subject knowledge and skills required in teaching through reading up-to-date educational literature.
5. Informal interactions with colleagues can also contribute to teachers professional growth if the content of interactions focuses on the every day business of teaching such as sharing concerns and ideas, talking about students, helping each other, and exchanging and developing materials.

6. New competent personnel are needed to provide leadership and to bring relevant and desirable changes in schools. Thus, having facilitators who are not able to provide high quality, meaningful development and change in teaching is waste of time.
7. Many teachers complained that lesson portions are vast to cover. As it is mentioned in the literature review, in the modern world, attempting to cover the subject is futile. Teachers should limit themselves to the content that seems the most desirable in view of their goals. They should also find strategies that provide depth rather than superficiality. Because teaching a few topics well is better than to teach many topics superficially.
8. Studies that were conducted in this area are insignificant. Thus, it is advisable conducting further research at national level.

BIBLIOGRAPHY

- Admas, R. S. (1983). **Observational Studies of Teacher Role**. Oxford: Pergamon.
- Anderson, J. W. (1987). **Opportunity to Learn**. Oxford: Pergamon Press.
- Berliner, D. C. (1988). **Developing Conceptions of Classroom Environments**. New York: Longman.
- Bestor, Arthur. (1976). **The Restoration of Learning**. New York: Alfred A. Knopf.
- Bloom, B. S. (1981). **All Our Children Learning**. New York: McGraw-Hill.
- Blue, J. T. (1986). **The Teaching and Learning Process**. Washington, DC: National Education Association.
- Brameld, T. S. (1972). **Education as Power**. New York: Holt, Rinehart and Winstong.
- Brookover, W. (1989). **Looking into Classroom**. Englewood Cliffs, NJ: Prentice Hall.
- Carin, A. A. (1997). **Developing Questioning Techniques: A Self Concept Approach**. Columbus, OH: Merrill.
- Carpenter, T. P. (1986). **Conceptual Knowledge as a Foundation for Procedural Knowledge**. London: Lawrence Erlbaum.
- Clark, J. S. (1978). **Teaching Critical Thinking**. Englewood Cliffs NJ: Prentice Hall.
- Clark, L. H. and Starr, I. S. (1994). **Secondary School Teaching Methods**. New York: Macmillan.
- Colen, E. G. and Chan, M. K. (1998). **The Use of Concept Maps to Represent Unique Thought Process: Toward More Meaningful Learning**. Boston: Houghton Mifflin.
- Doyle, W. (1983). **Making Managerial Decisions in Classrooms**. New York: Pergamon Press.

- Eurich, D. W. (1988). **Joining Together: Group Theory and Group Skills**. Boston: Allyn and Bacon.
- Farrar, M. T. (1987). **Effective Teachers of Young Children**. New York: Longman.
- Fisher, C. W. Cahen, L. S and Dishaw, M. L. (1984). **Who Learns and Who Doesn't?** New York: Longman.
- Frank, N. S. (1982). **Teacher Accessibility and Student Attention**. New York: Longman.
- Gage, N. L. and Berliner, D. C (1988). **The Scientific Basis of the Art of Teaching**. New York: Teachers College Press.
- Gagne, R. S. (1976). **Schools without Failure**. New York: Harper and Row.
- Gall, M. D. (1978). **Synthesis of Research on Teachers Questioning**. Boston: Little Brown.
- Glasser, W. (1993). **Schools without Failure**. New York: Harper and Row.
- Glenn, B. C. (1988). **Teacher Expectations and Student Perception**. New York: Harper and Row.
- Good, C. V. (1973). **Dictionary of Education**. New York: McGraw-Hill Book Company.
- Good, T. L. and Brophy, J. E (1987). **Looking in Classrooms** (4th ed.). New York: Harper and Row.
- Goodlad, J. I. (1994). **The Problems of Getting Markedly Better Schools**. New York: McGraw-Hill.
- Gorge, T. L. (1976). **Variables Influencing the Acquisition of a Generic Teaching Skill**. New York: Harper and Row.
- Hammond, D. L. (1972). **Standards of Practice of Learning-Centered Schools**. New York: Teachers College Press.

- Hansford, E. L. and Hattie, H. P. (1982). **Education and the Human Quest**. New York: Harper and Row.
- Holt, J. (1981). **Teach Your Own**. New York: Delacorte.
- Hunkins, F. P. (1979). **Involving Students in Questioning**. Boston: Allyn and Bacon.
- Hutchins, R. S. (1966). **Redesigning Education**. New York: Henry Holt.
- Jaeger, S. L. (1988). **Learning to Teach**. New York: McGraw-Hill.
- James, R. W. (1979). **The Critical Thinking Movement: A Historical Perspective**. New York: Longman.
- Jones, B. M. (1986). **Models of Teaching**. Englewood Cliffs, N-J: Prentice Hall.
- Jonson, C. E. (1988). **The Conditions of Learning and Theory of Instruction**. New York: Holt, Rinehart and Winston.
- Kearns, F. T. (1988). **Teaching Functions**. New York: Macmillan.
- Kierstead, J. (1985). **Direct Instruction and Experimental Approaches: Are They Mutually Exclusive?** New York: Harper and Row.
- Kourilsk, M. and Quaranta, J. (1987). **Effective Teaching Principles and Practice**. Genview, IL: Scott Foresman.
- Lerner, M. (1977). **Education and Radical Humanism**. Columbus, OH: Ohio State University Press.
- Long, D. H. (2002). **Teacher Education: The Key to Effective School Reform**. London: Ergin and Garvey.
- Marzano, R. J. and Others (1988). **Dimensions of Thinking: A Frame Work for curriculum and Instruction**. Alexandria: Association for Supervision and Curriculum Development.
- Mathews, J. (1992). **The Best Teacher in America**. New York: Henry Holt.

- Myer, R. E. (1998). **Text Based Questions that Foster Active Reading Strategies**. New York: Pergamon Press.
- Newmann, F. M. (1988). **Higher Order Thinking in High School Social Studies**. New York: Longman.
- Paris, S. G. and Lindauer, B. K. (1982). **The Development of Cognitive Skills**. Englewood Cliffs, N. J.: Prentice-Hall.
- Roger, C. R. (1989). **Interpersonal Relationships: Probes for Students of the Future**: Englewood Cliffs, NJ: Prentice-Hall.
- Rosenshine, B. V. (1988). **Teaching Functions in Instructional Programs**. Boston: Houghton Mifflin.
- Rothstein, A. M. (1992). **Teaching for Thinking** (3rd ed). New York: Teachers College Press.
- Show, B. J. (1988). **Transfer of Learning**. London: Lawrence Erlbaum.
- Shuell, T. J. (1988). **Teaching and Learning as Problem Solving**. New York: Macmillan.
- Shulman, L. S. (1987). **Paradigms and Research Programs in the Study of Teaching**. New York: Macmillan.
- Silberman, W. J. (1977). **Toward a Theory of Instruction**. New York: Norton.
- Simon, B. S. (1986). **Teacher Behavior and Student Achievement**. New York: Macmillan.
- Smith, B. O. (1989). **International Encyclopedia of Teaching and Teacher Education**. Oxford: Pergamon.
- Smith, R. C. (1989). **The Act of Teaching**. New York: McGraw-Hill.
- Snow, R. P. (1989). **The Teaching of Learning Strategies**. New York: Macmillan.

- Sternberg, R. (1997). **Teaching Thinking Skills: Theory and Practice**. New York: Simon and Schuster.
- Stiggins, R. J. (1986). **Questions and Answers about the Nature and Teaching of Thinking Skills**. New York: Freeman.
- Suberman, C. E. (1977). **Crisis in the Classroom: The Remarking of American Education**. New York: Random House.
- Tobin, K. R. (1986). **Investigations of Exemplary Practice in Science and Mathematics Teaching**. Englewood Cliffs, NJ: Prentice Hall.
- Wellington, R. C. (1980). **Essentials of Professional Growth**. New York: Pergamon Press.
- Westheimer, J. and Kahne, R. (1996). **Building School Communities**. Boston: Houghton Mifflin.
- Wilens, W. W. (1986). **Questioning Skills for Teachers** (2nd ed.). Washington, DC: national Education Association.
- Wittrock, M. C. (1993). **Models of Heuristic Teaching**. New York: Pergamon Books.

APPENDIX - A

ADDIS ABABA UNIVERSITY SCHOOL OF GRADUATE STUDIES DEPARTMENT OF CURRICULUM AND INSTRUCTION

Questionnaires to be filled by school directors, deputy directors, department heads and supervisor in a committee form.

The main objective of this questionnaire is to collect information regarding the strengths and weaknesses of teachers in academic knowledge and professional skills to implement that school curriculum the way it is expected, thereby to identify some major problems encountered by teachers. The study is targeted only on those teachers who have first degree. Your heartfelt cooperation as a committee member in evaluating each teacher by completing the questionnaire have paramount importance. Thus, I ask you kindly all the committee members to rate or evaluate the teachers by making classroom observation those who are now teaching English language, mathematics, physics, chemistry, Biology, Geography, History and Civic and Ethical education. To show your direct contribution, please, evaluate honestly and responsibly. I sincerely express my thank for your unreserved cooperation in advance.

Note: no need of writing name(s)

PART ONE: Personal data

Note: indicate your response by putting sign in the boxes.

1. Name of the school _____
2. Sex: Male Female
3. Age: a) 20 to 30 years b) 31 to 40 years c) 41 and above
4. Leadership position: a) Director b) Deputy director
c) Supervisor d) Department head
5. Service years in teaching: a) 1 to 5 years b) 6 to 10 years
c) 11 to 20 years d) more than 20 years

6. Service years in leadership position:

- a) 1 to 5 years b) 6 to 10 years c) 11 to 15 years
d) more than 16 years

PART TWO: Teachers subject matter knowledge rating form

Note 1: This part of questionnaire is expected to be filled by the committee of instructional leaders not by an individual, it is the same as to performance appraisal of the school teachers.

Note 2: Do the rating to the questions 1 to 4 by considering the following points as a criteria:

- The teacher's ability in making explicit instructional objectives
- The teachers' ability in making clear difficult concepts
- The teachers' ability in giving concrete and ample examples
- The teachers' ability in organizing a body of knowledge
- The teachers' ability in answering questions clearly
- The teachers' ability in emphasizing the main points.
- The teachers' ability in relating new knowledge to prior knowledge and experience (Adapted from Rothstein, 1992 p. 88).

The school's name _____

1. Based on the above points of references how many of your school teachers can be rated at the level "**very good**" from:

mathematics? _____	chemistry? _____
English language? _____	biology? _____
physics? _____	geography? _____
history? _____	civic and ethical education? _____

2. How many teachers can be rated at the level of "**good**" from:

mathematics? _____	chemistry? _____
English language? _____	biology? _____
physics? _____	geography? _____
history? _____	civic and ethical education? _____

3. How many teachers can be rated at the level of **"average"** from:
- | | |
|-------------------------|------------------------------------|
| mathematics? _____ | chemistry? _____ |
| English language? _____ | biology? _____ |
| physics? _____ | geography? _____ |
| history? _____ | civic and ethical education? _____ |
4. How many teachers can be rated **"poor"** from:
- | | |
|-------------------------|------------------------------------|
| mathematics? _____ | chemistry? _____ |
| English language? _____ | biology? _____ |
| physics? _____ | geography? _____ |
| history? _____ | civic and ethical education? _____ |
5. How many teachers **"very often"** use varieties of teaching methods/strategies (for example, problem solving , lecture, discussion method, project method, case study discovery etc... in teaching)
- | | |
|-------------------------|------------------------------------|
| mathematics? _____ | chemistry? _____ |
| English language? _____ | biology? _____ |
| physics? _____ | geography? _____ |
| history? _____ | civic and ethical education? _____ |
6. How many teachers **"Often"** use varieties of teaching methods/strategies in teaching?
- | | |
|-------------------------|-------------------------------------|
| mathematics? _____ | chemistry? _____ |
| English language? _____ | biology? _____ |
| physics? _____ | geography? _____ |
| history? _____ | civic and ethical education.? _____ |
7. How many teachers **"sometimes"** use varieties of teaching methods in teaching?
- | | |
|-------------------------|------------------------------------|
| mathematics? _____ | chemistry? _____ |
| English language? _____ | biology? _____ |
| physics? _____ | geography? _____ |
| history? _____ | civic and ethical education? _____ |

8. How many teachers "not at all " varieties of teaching methods/strategies in teaching?

mathematics? _____

chemistry? _____

English language? _____

biology? _____

physics? _____

geography? _____

history? _____

civic and ethical education? _____

PART THREE: Rating teachers' ability in planning instructional tasks that establish higher order learning

Please, rate your teachers in collaboration with the academic committee of your respective school. Points of reference for the evaluation can be the teachers' ability in planning instructional tasks that require

- Inferring
- Interpreting
- Inventing
- Problem solving
- Critical thinking
- Analyzing
- Synthesizing
- Evaluating
- Discovering etc

1. Based on the above given information, how many of your school teachers can be rated at the frequency of "very often" among

mathematics? _____

English language? _____

physics? _____

chemistry? _____

biology? _____

geography? _____

history? _____

civic and ethical education? _____

2. How many of teachers can be rated at the frequency level of "often" among
mathematics? _____
English language? _____
physics? _____
chemistry? _____
biology? _____
geography? _____
history? _____
civic and ethical education? _____

3. How many of teachers can be rated at the frequency of "sometimes" among
mathematics? _____
English language? _____
physics? _____
chemistry? _____
biology? _____
geography? _____
history? _____
civic and ethical education? _____

4. How many teachers can be rated at the frequency of "not at all" among
mathematics? _____
English language? _____
physics? _____
chemistry? _____
biology? _____
geography? _____
history? _____
civic and ethical education? _____

PART FOUR

I kindly ask you here again evaluate your teachers regarding their psychological knowledge. Hint: no two individuals are the same. They differ in a number of ways. Students are different in their interest, attitude, previous experience, ability (higher, middle, lower), in their learning style, physical makeup etc., Based on the above points of references, evaluate your perspective teachers how far they are competent to treat all these students' differences.

1. How many of your school teachers can be rated at the level of "**very good**" in treating individual learners differences?
 - a. mathematics _____
 - b. English language _____
 - c. natural sciences _____
 - d. social sciences _____
2. How many of your school teachers can be rated at the level of "**Good**" in treating individual differences?
 - a. mathematics _____
 - b. English language _____
 - c. natural sciences _____
 - d. social sciences _____
3. How many of them can be graded at the level of "**average**" in treating individual differences?
 - a. mathematics _____
 - b. English language _____
 - c. natural sciences _____
 - d. social sciences _____
4. How many of them can be rated "**poor**" in handling individual variations?
 - a. mathematics _____
 - b. English language _____
 - c. natural sciences _____
 - d. social sciences _____

APPENDIX –B

SCHOOL OF GRADUATE STUDIES FACULTY OF EDUCATION DEPARTMENT OF CURRICULUM AND INSTRUCTION

Questionnaires to be filled only by the teachers of schools who have first degree in teaching area

The main intention of this questionnaire is to collect first hand information regarding professional skills of high school teachers. As in any profession, there can also be skills gap in teaching profession. Thus, this questionnaire was designed to obtain recent and fresh information directly from the owner of the profession. It is believed that your cooperation in completing the designed questionnaire is absolutely important. Thus, please give adequate time and fill the questionnaires honestly.

I would like to express my thanks for your unreserved cooperation in advance.

Note: Don't write your name.

PART ONE: General Information

Please, indicate your response by putting sign in the boxes

Name of school _____

1. Sex: Male Female
2. Age: a. 20 to 30 years b. 31 to 40 years c. 41 and above
3. Service years in teaching: a. 1 to 5 years b. 6 to 10 years
 c. 11 to 15 years d. 16 to 20 years e. more than 20 years
4. Teaching load per week:
 a. 5 to 10 periods b. 10 to 15 periods c. 16 to 20 periods
 d. 21 to 25 periods e. 26 to 30 periods f. 31 to 35 periods

PART TWO: Teaching Skills Inventory Questions

1. Have you taken a course in general teaching methodology?

Yes No

2. Have you taken a course in subject area methodology?

Yes No

3. If your answer is "yes" in question item 1 and 2, have you applied multiple instructional strategies regularly in your class?

Yes No

4. If "no", What are the major problems that impede you from using varieties of teaching methods? Please list the problem as much as possible..

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

5. Are you well familiar to human development and learning theories?

Yes No

6. Have you advised your students how to study the subject matter?

Yes No

7. Have you taught your students how to take notes?

Yes No

8. Are you competent enough in planning instruction?

Yes No

APPENDIX -C

**አዲስ አበባ ዩኒቨርሲቲ
ድህረ-ምረቃ ት/ቤት
ካሪኩለምና ኢንስትራክሽን ትምህራት ክፍል**

በ2ኛ ደረጃ ት/ቤት ተማሪዎች የሚሞላ መጠይቅ (11ኛ እና 12ኛ ክፍል ብቻ)

የዚህ መጠይቅ ዋና ዓላማ የ2ኛ ደረጃ መምህራን አዲሱን ሥርዓተ ትምህርት ተግባራዊ ለማድረግ የአካዳሚክ ወይንም የቀለም ዕውቀታቸው፣ የማስተማር ክህሎታቸው የሥነ-ልቦና እውቀታቸው ምን ያህል አስተማማኝ እንደሆነ ለመገምገም ታስቦ የተዘጋጀ መጠይቅ ነው።

ስለዚህ ይህንን መጠይቅ በደንብ አስበሀበት(ሽበት) በትክክል በአሁኑ ጊዜ መምህሩ የክፍል ትምህርት በምሰጡበት ጊዜ የሚያከናውኑዎቸውን ድርጊቶች በመጠይቁ ዝርዝር ነጥቦች ላይ ተመሥርተህ(ሽ) እንዲትሞላ(ዱ) አደራ እላለሁ። ጊዜህን(ሽ) መለዋዕት አድርገህ(ሽ) ይህን መጠይቅ ስለሞላህ(ሽ) ከልብ አመሰግናለሁ።

- ማሳሰቢያ: 1. የሚገመገሙት መምህራን የእንግሊዝኛ ቋንቋ የሂሳብና የሥነ-ዜጋ መምህራን ብቻ ናቸው።
2. የራስህንም ሆነ የመምህሩን ስም መጻፈ አያስፈልግም።
3. የሦስቱንም መምህራን ግምገማ በተለያዩ ወረቀት ላይ መሙላት ያስፈልጋል። ለአንድ ገምጋሚ ተማሪ በመምህራን ቁጥር ሦስት ኮፒ ወረቀት ሊደርሰው ይገባል።
4. በመረጥከው(ህው) ቁጥር ሥር «✓» ምልክት አድርግ (ጊ)።

መፍቻ:: 4: ማለት እጅግ በጣም ጥሩ ማለት ነው

3: ማለት በጣም ጥሩ ማለት ነው

2: ማለት ጥሩ ማለት ነው

1: ማለት ዝቅተኛ ማለት ነው

የት/ቤቱ ስም _____

ተገምጋሚው መምህር የሚያስተምረው የት/ዓይነት _____

የገምጋሚ ተማሪ ጾታ _____ ዕድሜ _____ የክፍል ደረጃ _____

ተ.ቁ	ዓይነት	መስፈርት			
		4	3	2	1
1	መምህር የየዕለቱን የትምህርት ዓላማዎች ለተማሪዎች ግልጽ የማድረግ ብቃቱ				
2	ግልጽ ያልሆኑ ሀሳቦችን የማብራራት ችሎታው				
3	መምህር ለተማሪዎች በሚገባቸው ቀለል ያለ ቋንቋ ጥያቄ የመጠየቅ ችሎታው				
4	ተማሪዎችን ሊያመራምሩ የሚችል ጥያቄዎችን አዘጋጅቶ የመጠየቅ ብቃቱ				
5	ተማሪዎችን ዘወትር በንቃት በትምህርት ላይ የማሳተፍ ችሎታው				
6	አንዱን የትምህርት ክፍል አስተምሮ ሲያበቃ የመከለስ ብቃቱ				
7	ትምህርቱን ማራኪና አሳታፊ ለማድረግ የተለያዩ የማስተማሪያ ስልቶችን የመጠቀም ብቃቱ (ምሳሌ ውይይት፣ ክርክር፣ የመሰክ ጉብኝት፣ ሙከራ፣ በራስ ፈጠራ ለችግሮች መፍትሔ ተማሪው እንዲያገኝ ማበረታታት ወዘተ)				
8	ተማሪውን ሊያመራምሩ ሀሳቡን ሊያስፋለት የሚችሉ የትምህርት ይዘቶችን እራሱ አስበበት መርጦ ወይንም እራሱ አዘጋጅቶ የማቅረብ ችሎታው				
9	በክፍል ውስጥ የሚሰጠውን ትምህርት ይዘት በራሱ ፈጠራ ለተማሪው በሚስማማው መልክ አዘጋጅቶና ተጨባጭ አድርጎ የመስጠት ብቃቱ				
10	የተለያዩ የትምህርት አቀባበል ያላቸውን ተማሪዎች (ጎበዝ፣ መካከለኛ፣ ዝቅተኛ) ተማሪዎችን ልዩ ፕሮግራም በማዘጋጀት የመርዳት ፈቃደኝነትና ችሎታው አማራጭ ትምህርቶችን የመስጠት ብቃቱ				
11	ተማሪዎች እንደይሰለጩ ልዩ ልዩ የማነቃቂያ ዘዴዎችን የመጠቀም ችሎታው				
12	የትምህርቱን ይዘት ከተጨባጩ ዓለም ጋር አዛምዶ የማቅረብ ችሎታ				
13	በክፍል ውስጥ ከተማሪዎች በሚነሱ ጠቃሚና በጥልቀት ማሰብን በሚጠየቁ ጉዳዮች ወይንም ውይይት ላይ ሁሉም ተማሪ እንዲሳተፍ የማድረግ ብቃቱ				

APPENDIX -D

Classroom observation checklist

1. Name of the school _____
2. Subject _____
3. Grade and Section _____
4. Time Begin _____ Time ended _____
5. Observation round _____

No	Purposes of the questions	Frequency	
		No	%
1	To find out something one did not know		
2	To develop cognitive memory and insert numbers into previously learned formulae		
3	To help students interpret the material		
4	To emphasize important points		
5	To share ideas or opinions		
6	To maintain order		
7	To obtain the attention of wandering minds		
8	To develop ability to think		
9	To encourage involvement		

APPENDIX – E

A specification grid for teacher-made questions analysis in different subjects

Specification	Subjects					
	English	Mathematics	Geography	History	Physics	Biology
	Frequencies	Frequencies	Frequencies	Frequencies	Frequencies	Frequencies
1. Knowledge						
1.1 Define						
1.2 Recall (who, what, where, when)						
Total						
2. Comprehension						
2.1 describe						
2.2 compare and contrast						
2.3 rephrase						
2.4 explain the main idea						
Total						
3. Application						
3.1 apply						
3.2 classify						
3.3 use						
3.4 solve						
3.5 how many? Which? What is?						
Total						
4. Analysis						
4.1 identifying causes						
4.2 draw conclusion						
4.3 why?						
Total						
5. Synthesis						
5.1 predict						
5.2 design						
5.3 What would happen if?						
5.4 How can we solve						
Total						
6. Evaluation						
6.1 argue						
6.2 give your opinion						
6.3 evaluate						
Total						

Appendix – F

Points of interview

Question no 1,2,3,4 and 5 were addressed to department heads, but question number six was addressed to all the schools teachers who have first degree in teaching.

1. What kinds of teaching methods do your schoolteachers employ usually?
2. What are the major problems for not using varieties of teaching methods?

3. What are the peculiar weaknesses of English language teachers in teaching the language?
4. What are the major weaknesses of your schoolteachers in teaching social sciences?
5. What are the major weaknesses of your schoolteachers in teaching science subjects?
6. In your opinion, which kinds of teaching method(s) is/are more promising for promoting higher order thinking?

DECLARATION

I hereby declare that this thesis is my original work done under the guidance of Dr. Derbssa Dufera. All relevant sources used for the thesis are duly acknowledged.

Name: Temesgen Shega

Signature:



Place Addis Ababa University

Date June 10, 2004