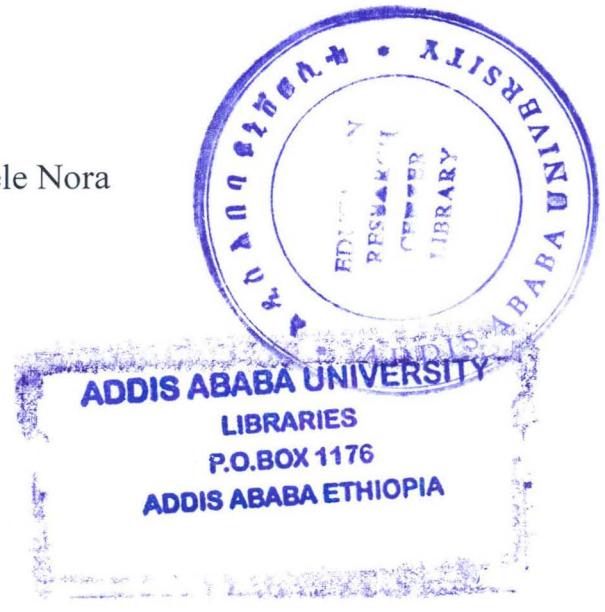
ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
INSTITUTE OF EDUCATIONAL RESEARCH

Methods of Teaching and their Implications for Quality of Student Learning at Samara University

Anbessa Bekele Nora



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ACRONYMS

COL: Commonwealth of Learning

DAAD: Duetscher Akademischer Austausch Dienst

ETP: Education and Training Policy

GTP: Growth and Transformation Plan

HE: Higher Education

HEIs: Higher Education Institutions

HERQA: Higher Education Relevance and Quality Agency

ICDR: Institute of Curriculum Development and Research

MoE: Ministry of Education

OECD: Organization for Economic Co-operation Development

UNESCO: United Nations Educational, Scientific and Cultural Organization

ABSTRACT

The main purpose of this study was to assess methods of teaching and their implications for quality of student learning. In order to meet the objectives of the study, a descriptive survey design was employed. From the total population of 256 teachers and 2579 students, 128 teachers and 516 students were randomly selected for this study. Four faculty deans were also selected using availability sampling. Questionnaires and interview were used for collecting data. The questionnaires were piloted and checked for their reliability. Documents were also analyzed to supplement the data. The data obtained through the questionnaires were analyzed using frequency, percentages, mean, standard deviations, t-tests, and rank correlation. The information obtained through open-ended questionnaires and the interview were qualitatively analyzed to supplement the quantitative data.

The findings revealed that teachers were highly arranging consultation hours, using examples, illustrations and demonstrations to explain and clarify the lessons or contents they teach, and informing the lesson objectives. They were also giving summary at the end of the lesson and using attention gaining activities, ideas, concepts, and devices while teaching. Furthermore, the study revealed that teachers used rewards and reinforcers to motivate students who were performing well and creating situations in which appropriate learning was taking place. It was also noted that teachers were not allowing their students to give constructive feedback on each others' work. Teachers were also highly considering the age and maturity level of their students, their students' background knowledge and existing skills, the content of the subject matter or the instruction, and the learning objectives or outcomes to be achieved, their teaching characteristics such as their knowledge, competencies, skills and experiences, and the time, space/class size, facilities and resources for their students' learning before choosing teaching methods. With regard to teaching methods, teachers' creation of learners' interest, enthusiasm and appreciation, encouragement of students' participation or involvement and success in their learning, provision of students with demonstrations which make them good observers, and enhancing critical thinking and skills of scientific investigation, supporting their students to learn how to discover and organize things, using textbooks, handouts and other printed materials to teach their students, providing or giving individual assignments and projects to them, and encouragement of them to develop group learning skills were high. Teachers also encouraged students to interact with each other in the learning activities and were not using mediated materials and multimedia. Lecture method was found to be the most commonly employed method of teaching followed by discussion, individualized and demonstration methods. Regarding quality indicators, teachers' use of various teaching methods, the existence of academic staff-to-student ratio and the relevance of the curricula to students' learning were moderate. The existence of good leadership and management system that facilitate student learning and the integration of learning with the use of technologies were very low. Teachers were assessing the performances of their students using continuous and summative assessment methods. This implies that there is good quality of student learning even though there are some problems to be solved. Therefore, it is recommended that mediated materials and multimedia, and various teaching methods should be used for the betterment of students' learning. Learning should also be integrated with the use of technologies. Students should be allowed the chance of giving feedback on each others' work. Good system of leadership and management that facilitate student learning should also be adopted. Thus, all stakeholders of the teaching learning process (management bodies, teachers and students) should play their part as each of them has distinctive roles.

CHAPTER ONE

1. INTRODUCTION

In this chapter, the background of the study, statement of the problem, research questions, objectives of the study, significance of the study, delimitation of the study, definition of key terms, and organization of the study have been treated one after the other.

1.1. Background of the Study

It is important to use different teaching methods at HEIs in the teaching learning process to produce students who are responsible and competent in teaching, research and community services. According to Rao (2003:268) institutions of HE have the main responsibility for equipping individuals with advanced knowledge and skills required for positions of responsibility in government, business and academic areas. These institutions produce new knowledge through research, and disseminating this knowledge. HE in modern society seeks to preserve, transmit and advance knowledge and is committed to change. Therefore, the importance of teaching as an instrument of change and progress had been underlined by various educational experts, committees and commissions.

According to Daniel (2004:63), HEIs are expected to produce graduates who are capable of bringing changes and improvements in the society. With regard to this, graduates of HEIs are expected to employ different teaching methods which have implications for the quality of student learning. This is because quality of student learning is the issue or the agenda of all educational institutions. Therefore, teaching requires good planning of activities.

Teaching encompasses course design, course management and methods of face-to-face teaching, provision of other learning opportunities, assessment and feedback to students. It is concerned with providing students with opportunities to learn. It is an intentional activity and an interactive process involving teachers, students, tasks and the process by which the teacher imparts knowledge, skills, and attitudes to the students (Ellis, 1995: 213).

Similarly, teaching is the action of a person imparting knowledge, skill or giving instruction; or the job of a person who teaches using the appropriate methods. Clark and

Starr (1986) cited in MoE (1999:4) note that teaching is an attempt to assist students in acquiring or changing some skills, knowledge, ideal, attitude, or appreciation. Therefore, teaching is a set of processes and procedures used by the teacher to emphasize on aspects of student's development such as physical, spiritual, emotional, social, and cognitive aspects. Fry, H., Ketteridge, S. and Marshall, S., (2003:26) have also noted that teaching involves helping students to know something not known before, and constitutes a process of change. Therefore, teaching is a process of facilitating student learning.

Supporting this, Azeb (1984:74) states that teaching is an act of providing, directing, checking and following-up activities to facilitate formal or informal learning. It is a collection of practical activities aimed at bringing about learning or understanding. To her, teaching is not dictating, ruling, conditioning, forcing, indoctrinating or taming. Instead, it aims at bringing about learning and is practiced in such a way that it takes into consideration the student's intellectual capacity and ability for independent judgment.

Therefore, teaching is the interaction of the teacher with a group or individual students using different methods of teaching appropriate to the content to be delivered which has a positive implication for quality of student learning. It is a process by which both teachers and students establish a shared environment of values, beliefs, knowledge and appreciation that have impact on their perception of what is real. Teaching becomes effective if teachers develop and use different methods of teaching which are appropriate to the content to be delivered.

The development of methods of teaching has been traced back to ancient Greece. The most long-lived and widespread set of teaching methods are those associated with the study of language and literature (Singh, 1989) cited in MoE (1999:62). Ancient teaching methods emphasized memorization and analogical reasoning, a form of reasoning in which one thing is inferred to be similar to another thing in a certain respect, on the basis of the known similarity between the things in other respects (ibid). According to Biadgelign (2010:99), methods of teaching are general means, manners, ways, procedures, or steps by which a particular order is imposed upon teaching or presentation of activities. Methods of teaching also signify a constellation of systematic arrangements and techniques cast to fit curricular

elements consisting of educational goals, objectives and outcomes in line with the maturity and readiness level of students.

Hence, it includes procedures, instructional devices, and direction of instructions intentionally selected to help the teacher to achieve the intended teaching and learning objectives (Obanya, Shabani and Okebukela, 1996:17). In clearer terms, methods of teaching refer to construction of how teaching ought to be done to bring quality of student learning which requires the capacity and commitment of the teacher. It is also a purposeful pedagogical organization of activities and implementing them according to certain rules in order to make learners reach at specified objectives. Supporting this, Biadgelign (2010:99) notes that teaching methods may be viewed as a series of discrete steps that the teacher uses or takes so as to achieve the predetermined objectives.

Therefore, the quality of teaching is determined by the quality of student learning as the teacher uses appropriate and relevant methods of teaching. This is because it does not only affect students' performance but also the community in particular and the society at large. Learners should pass through effective teaching to serve the society as intended. This can be achieved or mastered if the teacher uses the teaching methods that suit to the content of the instruction and if problems related to quality are solved.

The ETP (1994:2) states that our country's education is entangled with complex problems of relevance, quality, accessibility and equity. The absence of interrelated contents and mode of presentation that can develop student's knowledge, cognitive abilities and behavioral change by level, to adequately enrich problem-solving ability and attitude, are some of the major problems of our education system. Inadequate facilities, insufficient training of teachers, overcrowded classes, shortage of books and other teaching materials, all indicate the low quality of learning provided. According to Varghese (2004) cited in Tigist (2009:6) quality of learning could be based on various factors such as the level of infrastructural facilities, quality of programs offered, qualification levels of teachers, performance of students in their evaluation while in the University and their performance once on the labor market.

Hence, the purpose of this study is to assess the methods of teaching and their implications for quality of student learning at Samara University.

1.2. Statement of the Problem

Assuring and enhancing the quality of teaching and learning in HE has become a major concern all over the world (Firdissa, 2009:19). The society and employers need graduates who are capable of solving problems and who bring quality to student learning by employing appropriate methods of teaching to deliver contents. Therefore, this expectation can be achieved as HEIs prepare students who are well equipped with knowledge, skill, understanding and attitude.

It is unfortunate that some teachers teach students without having much formal knowledge of how students learn. Many lecturers know how they learn best, but do not necessarily consider how their students learn and if the way they teach is predicated on enabling learning to happen. As a result, the learning environment in which learners learn within affects the outcomes.

It is stated in the ETP that the main objective of the teaching-learning process in our country is to create problem solving citizens (ETP, 1994:7). One of the measures by which this quality is assured is through employing appropriate teaching methods.

To play this role, the quality of teachers is then a must to be attained. That is, they need to consider the following basic things before starting to teach their students. They include stated instructional objectives, content of the instruction, characteristics of teachers and learners, and specific conditions of the instruction that can play a great role in the teaching method selection/choice. These factors might affect the quality of students' learning in many ways if not appropriately considered by the teachers.

Students have different ways of absorbing information and of demonstrating their knowledge. Their exposure to different methods of teaching affects the way they grasp knowledge. When the teacher lacks control of the methods of teaching to be used, it does not bring quality to student learning. If teachers do not commit themselves to use the

teaching method suited to the content to be delivered, it will result in less skilled manpower production that becomes less effective in solving the problems of the community in particular and society in general. In the teaching learning process, the methods of teaching employed bring a great impact for the quality of student learning.

On the other hand, the issue of quality of student learning has become one of the subjects of debate in Samara University in which teachers would be involved significantly and face the entire situation in the University. In my stay at the University (for about two years) from discussions (formal and informal) I made with teachers and the pedagogical skills training I gave to them, the question of quality of student learning was raised.

Teaching without using appropriate method affects the quality of student learning. As a result, this might bring poor graduates that are not capable of solving societal problems. This initiated me to assess the methods of teaching and their implications for quality of student learning at Samara University.

1.3. Research Questions

The study focuses on assessing and identifying the teaching methods and their implications for quality of student learning at Samara University. Therefore, the study tries to answer the following basic questions:

1. What are the teaching methods most commonly employed by teachers at Samara University?
2. To what extent are teachers effective in bringing good practice of teaching in the University?
3. To what extent teachers consider factors that affect the choice of teaching methods?
4. What are the implications of the teaching methods used for quality of student learning?

Quality: is the level of fitness for purpose of students' needs and priorities as a result of learning which can be measured by establishing an acceptable criteria and standards of good performance.

Quality of student learning: is the value/worth of students' attainment or achievement of the predetermined learning outcomes or the knowledge and skills students acquire as a result of learning in which quality indicators are given due emphasis.

Implication: is the inference made from methods of teaching on quality of student learning or the logical relation/connection between methods of teaching and quality of student learning.

1.8. Organization of the Study

This study has been organized into five chapters. In the first Chapter, background of the study , statement of the problem, research questions, objectives of the study, significance of the study, delimitation of the study, and definition of key terms were included. In the second Chapter relevant review of the related literature was incorporated. The third Chapter presented methodology which included design of the study, data sources, sample population and sampling technique, instruments of data collection, procedures of data collection, and data analysis. The fourth Chapter dealt with presentation, analysis, and interpretation of data. The last Chapter incorporated the summary of major findings, conclusions, and recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Concept and Definition of Teaching

The transmission of worthwhile activities, experiences, findings, achievements, or, in short, cultural heritages of one generation to the next cannot be done haphazardly. That is, the skills needed to perform the functions or roles of the public (community) come systematically through great effort, commitment and diligence. Such activities, according to Brown and his associates (1992:12), have to be taught and acquired effectively and efficiently. This grand reason is the very cause for the emergence and use of the term teaching.

Teaching is defined in different ways by different educators. These definitions range from being traditional (the teacher is the supplier of knowledge, skills and experiences) to being modern (the teacher is the facilitator of student learning). Traditionally, nevertheless, the role of the teacher is seen as a purveyor of information; the teacher has been the source of all knowledge. This suggests the picture of student sitting in rows in front of the teacher who is talking and transmitting information to them, while they listen passively (Reece and Stephen, 2003:13). Nowadays, however, the teacher is the facilitator; a person who assists students to learn for themselves (ibid). In short, teaching can be adjusted in a way to suit student requirements and abilities. Some of the definitions of teaching are written hereunder.

To teach is to give information; to show a person how to do something; to give lessons in a subject... teaching is imparting knowledge or skill (Dunkin, 1988:12). On the other hand, teaching may be regarded as providing opportunities for students to learn. It is an interactive process as well as an intentional activity (Brown and Attkins, 1988:13).

Teaching is also defined as an act of providing, directing, checking and following-up activities to facilitate formal or informal learning. It is a collection of practical activities aimed at bringing about learning or understanding. Hence, it is a task word rather than an achievement word (Azeb, 1984:74). In this case, teaching involves three inseparable elements, namely the teacher, the learner and the subject matter or learning experiences.

According to Jacobsen et al (1993:37), teaching can be described as giving instructions to or sharing one's knowledge with another person. It is a means for providing students with the knowledge and skills they need to function successfully in the world. In a very practical sense, teaching is diagnosing and prescribing. Teacher diagnoses what the specific learning needs (or deficiencies) are, and then prescribe the particular strategies and activities to meet them.

According to Azeb (1984:75), teaching is also defined as the aspect of instructional process concerning teacher's activity including all actions of a teacher for evoking and leading the process of learning and with it part of the indivisible unity of teaching and learning. It carries three main functions namely imparting subject matter and respective activities of students, helping the students in learning assisting and providing techniques of learning, and leading the instructional process including planning, steering, checking and evaluating. She also notes that teaching is the interaction of the teacher with a group or individual students.

A more comprehensive definition of teaching is provided in terms of its purposes. For instance, it may be regarded as a process that facilitates learning. In this process, the teacher has an important role to play because he/she acts like a catalyst, actively stimulating learning (Farrant, 1988:13). More specifically, the purpose of teaching, according to McKernan (1996:13), is to help students to learn to inquire and to think rationally for themselves critically and reflectively. These definitions of teaching reveal the involvement of two inseparable bodies: the teacher and students. In each definition, one may realize that teaching is an attempt/activity so as to help students so that they can acquire/gain or change some skill, attitude, knowledge, beliefs, convictions, or appreciation.

2.2. Effective Teaching

Effective teaching can be termed or named in different ways by different scholars. For instance, it may be success in teaching for Monroe (1956), or good teaching for Zaborick (1986), or effective teaching for Perrott (1986). In whatsoever name that effective teaching

may be called, it is difficult to find a single, precise, and consistent or acceptable definition for it.

There is much debate within the higher education community on how teaching effectiveness may be defined (Sajjad, 2004:3). For instance, Centra (1993:42) defined effective teaching as "that which produces beneficial and purposeful student learning through the use of appropriate procedures". Braskamp and Ory (1994:40) by including both teaching and learning in their definition defined effective teaching as the "creation of situations in which appropriate learning occurs; shaping those situations is what successful teachers have learned to do effectively". Cabrera and La Nasa (2002:3) defined effective teaching is one that produces demonstrable results in terms of the cognitive and affective development of the students.

Good/effective teaching is now understood to involve a process of facilitating learning rather than being the simple transmission of knowledge from the teacher to the learner. The roles that teachers need to take to facilitate learning are outlined below (Smith and Blake, 2005:2).

- Placing a strong emphasis on the workplace to provide a meaningful context for learning where problems are framed by the context of the workplace.
- Encouraging interactive approaches to learning activities to allow learners to apply and interact equally with the thinking and performing aspects of learning.
- Establishing learning outcomes that are clear in their intent to achieve 'work-readiness' for learners.
- Giving learners the opportunity to collaborate and negotiate in determining their learning and assessment processes.
- Understanding learners as 'co-producers' of new knowledge and skills.
- Recognizing that the prior learning and life experiences of learners are valuable foundations for constructing new knowledge and skill sets (although they can also impose limitations).
- Valuing the social interactions involved with learning in groups.

To make teaching effective, the teacher should be effective. According to Borich (1988), effective teachers have the following characteristics or they are distinguished from ineffective teachers by the following peculiar characteristic features.

An effective teacher should inform learners of the lesson objectives, provides learners with an advance organizer (place a lesson in perspective of past and/or future), check for task-relevant prior learning at beginning of the lesson, give directives slowly and distinctly, know ability levels and teaches at or slightly above learners' current level of functioning, use examples, illustrations, and demonstrations to explain and clarify, and provide review or summary at end of each lesson (ibid pp. 298).

An effective teacher also uses attention gaining devices (begin with a challenging question, visual, example), shows enthusiasm and animation through variation in eye contact, voice and gestures, varies mode of presentation (lectures, asks questions, independent practice), uses a mix of rewards and reinforcers (extra credit, verbal praise, independent study), incorporates student ideas or participation in some aspects of the instruction, and varies types of questions (divergent, convergent and probes to clarify, to solicit, to redirect) (ibid pp. 301).

2.3. Definition of Methods of Teaching

Before defining what method of teaching is, it is important to describe what method is. As MoE (1999:61) states, the term "method", which was taken from Latin word, simply implies mode or way. The general meaning of method, according to Azeb (1984:90), is an orderly planned progress towards a given and/or a coordinated system of principles for the performance or conduct of practice. It enables the teacher to select appropriate learning experiences, create appropriate environment, guide and direct learning activities, assess and evaluate progress and bring about learning or understanding systematically without unnecessary waste. Therefore, from this we can understand that, in the world of education, method of teaching is the mode or the way by which a subject matter is communicated in a way that it could properly achieve the intended outcome or objective.

Methods of teaching are general means, manners, ways, procedures, or steps by which a particular order is imposed upon teaching or presentation of the activities (Biadgelign, 2010:99). In clearer terms, methods of teaching refer to construction of 'how teaching ought to be done'. On top of this, teaching methods may be viewed as a series of discrete steps that the teacher uses or takes so as to achieve the predetermined instructional objectives (ibid).

Similarly, Biadgelign (2010:99) notes that teaching methods may be viewed as a series of discrete steps that the teacher uses or takes so as to achieve the predetermined objectives. It is the rational ordering and balancing, in the light of knowledge and purpose, of the several elements that enter into the teaching learning process. To Obanya, Shabani and Okebukela (1996:17) teaching methods also signify a constellation of systematic arrangements and techniques cast to fit curricular elements consisting of educational goals, objectives and outcomes in line with the maturity level of students.

A more specialized meaning of teaching method, according Biadgelign (2010:100), is the sequential or unified arrangement and selection of elements of the curriculum on the basis of their appropriateness to students' developmental levels, and the educational outcomes aimed at as well as the mainly different ways and techniques by which these are introduced to the students.

2.4. Historical Development of Methods of Teaching

According to Singh (1989) cited in MoE (1999:62), the development of methods of teaching has been traced back to ancient Greece. The most long-lived and widespread set of teaching methods are those associated with the study of language and literature. Ancient educational methods emphasized memorization and analogical reasoning, a form of reasoning in which one thing is inferred to be similar to another thing in a certain respect, on the basis of the known similarity between the things in other respects.

Singh (1996) cited in MoE (1999:62) also notes that the scientific approach to teaching methods began with the emergence of educators like Comenius, Pestalozzi, Froebel, and Herbart. A brief summary of their contributions to methods of teaching is described as follows:

Comenius (1592-1670) highlighted that: experience is a strategy point; nature can contribute to method; content should be in relation to the learner's development; and teachers should encourage discovery learning. Pestalozzi (1746) emphasized teaching methods should be in accordance with the development pattern of children's growth. Froebel (1782-1852) stressed the self-activity of the child. Herbart (1776-1841) propounded five instructional activities associated with teaching methods: preparation, presentation, association, assimilation, and application.

2.5. Considerations in Choosing Teaching Methods

Teachers who are able to identify what their respective students are expected to acquire/master, confidently can select what type of method to employ. That method or the combination of the different methods, for that particular task or topic, therefore, can be regarded as the best. According to Ramsden (2003:54), the choice of a given teaching method should depend on a variety of elements. They include the age and developmental level of the students, what the students already know and need to know to succeed with the lesson, the subject-matter content, objective of the lesson, the available people, time, space and material resources, the knowledge and skill of the teacher about teaching methods, learning theories and the physical setting, students' background knowledge, environment, and learning goals.

Research evidence regarding the best method of teaching reveals that there is no a single, reliable, multi-purpose method which can possibly be considered as the best. For the betterment of the teaching-learning process and thereby for the attainment of the instructional objectives, therefore, teachers are advised to approach their teaching in a variety of ways; they have to use the combination of different methods of teaching (Biadgelign, 2010:108).

The combination of different methods of teaching, nonetheless, cannot be done by commonsense. There are a number of factors that should be considered. Since what is important, in the final analysis, according to Davies (1981:45), is the requirement of the task to be mastered. That is, instructional objectives have to be determined prior to trying to select and combine the variety of methods of teaching. Supporting this, Biadgelign

(2010:109) notes that teachers have to have a clear image/conception about the distinctions of the following questions when planning to select teaching methods. Does the task/topic to be taught need the real environment? Does the task/topic to be taught need teacher's explanation? teacher's interpretation? Does the task/topic to be taught involve debatable ideas? issues? concepts? and Does the task/topic be left to students to do it for themselves?

Similarly, such a process of combination, according to Ellington (1996:109), should begin with an examination of the characteristics of the target population and the topic area to be covered, followed by an analysis of the existing skills of the students. The next step should be the formulation of a clear set of educational objectives or outcomes preferably couched in behavioral terms so that both teachers and students are clear as to what the latter are expected to achieve. The characteristics of the students, and the background and preferences of teaching staff involved should also be examined. Once this has been done, thought should be given as to what particular mix of teaching/learning methods would be most suitable for helping the students to achieve these various objectives.

According to Borich (1988:22), before choosing a certain type of instructional method, a teacher has to consider the following determining factors such as stated instructional objectives, content of instruction, characteristic of learners, specific conditions of instruction (time, facility, class size, resources, etc), and teacher's characteristics.

Thus, there are many types of teaching methods, depending on what information or skill the teacher is trying to convey. When teachers decide on their respective methods, they need to be flexible and willing to adjust their styles according to their students and the content. Student success, therefore, is largely based on effective teaching methods.

2.6. Classifications of Teaching Methods

There are different basis of classifications of methods of teaching. For instance, according to Tewodros and Admasu (2000:35), methods of teaching are classified as traditional and modern depending on the nature of the involvement of the students and the teacher, the consideration of educational teaching objectives, and their modernity or time in use.

According to Biadgelign (2010:107), classifications of methods of teaching can be done based on different criteria; for instance, definitions, roles, number of students in the teaching learning process, or based on resources to be used. Accordingly, types of teaching methods can be seen from four general perspectives: mass instruction methods (lecture and demonstration methods); active learning methods (inquiry, guided discovery, and laboratory methods); individualized learning methods; and group learning methods.

2.6.1. Mass Instruction Methods of Teaching

Mass instruction, according to Ellington (1996:110), is, of course, as old as education itself, with the lecture and expository lesson being the dominant instructional techniques in virtually all sectors of formal education and training throughout recorded history. According to McKimm and Jollie (2007:1), in mass instruction, the role of the teacher is controlling the instructional process. That is, s/he has a traditional role in teaching students. To Ellington (1996:110), it was, however, only in the period following the Second World War that a systematic effort was made to improve the efficiency and cost-effectiveness of the method by using the new types of hardware that were starting to become available. By such means, it was hoped that more people could be educated or trained without necessarily increasing the number of teachers or trainers, and that the overall effectiveness of the teaching process could be improved. Some important outcomes were the development of basic mass instruction tools like the overhead projector and 35mm slide projector, and the increasingly widespread use of 'hardware-based' techniques such as film, radio, television broadcasting and closed-circuit television. Some of the main teaching methods that fall under the general heading of mass-instruction method include lecture and demonstration (Biadgelign, 2010:113).

2.6.1.1. Lecture Method

The lecture method, although considered by modern educators as traditional or out-dated, is still one of the most widely used methods of teaching, especially in post secondary institutions (Brown, et al. 1992). Supporting this, Brown and Atkins (1988) note that the lecture method is widely used in the twenty-first century. Besides, despite the many

criticisms regarding the lecture method, when carefully planned and skillfully delivered, it is pleasurable to students and teachers.

Lecture refers to a verbal or oral presentation of facts, ideas and concepts where the teacher addresses learners without interruption and complete utilization of teaching time. It is an effective way to introduce new information or concepts to a group of learners. The lecture method is primarily used to build upon the learners' existing base of knowledge (Brown, 1988:8).

The most defensible function, according to Azeb (1984:215), of the lecture in the areas of the humanities and the social sciences is its use as a means of synthesizing a mass of knowledge, facts and ideas that it would be impossible for the student to master for himself, since he would not have the capacity to discriminate between relevant and irrelevant, sound and unsound, and to organize what was worth organizing.

The lecture method has two forms: the formal and active (informal) lecture. The formal lecture method is virtually uninterrupted monologue taking occasional questions. It is almost an address to the content. It emphasizes on 'chalk and talk' and can be used for any size of group. The informal or active lecture method is a lecture period including mini-sessions of student activity. It is a gapped lecture. That is dividing the lecture into small sections and gives the students an activity to complete between each section. This allows the students to absorb and manipulate the material given to them (Cox, 1994: 28).

Generally, the lecture method of teaching, according to Brown et al as cited in Biadgelign (2010:114), is a process of delivering or imparting verbally a body of knowledge, new experience, contents, or subject matter, to students based on a pre-planned, well- organized plan (the periodic lesson plan). That is, the teacher presents ideas or concepts, develops and evaluates them, and summarizes the main points. Supporting this, Kizlik (2010:66) notes that, in this method, the teacher is considered as an authority and a model in determining the content and organization of the course to a great extent. Moreover, the students are merely recipients of the information about the content. The lecture method of teaching has

both advantages and disadvantages. They, according to Brown et al (1992), Ellington (1996) and Cox (1994:67) are summarized as follows.

Advantages

Undoubtedly, one of the reasons why the lecture has retained its dominant place in the education and training scene is that the method appears to be highly cost-effective, since it enables high student/staff ratios to be achieved; 100 students can, for example, be taught just as effectively as 10 in a lecture situation.

Another point in the lecture's favor is that it appears to be just as effective as other teaching methods at conveying information when well done. The majority of studies which have compared the lecture method with other methods designed to develop lower-cognitive skills have not been able to detect any difference that is statistically significant, provided that subsequent reinforcement of the material covered in the lecture takes place.

It has high inspirational and motivational value. Therefore, it is an effective method for generating interest and appreciation on the part of learners. It also supplements and enriches materials found in students' textbooks. The teacher has complete control over the choice of knowledge that the students learn. That is, the teacher can present exactly what he/she wants in a way he/she wants.

It results in economy of time and effort. This is for the very reason that students' time and efforts are not wasted while trying to discover, search, and solve things for themselves. This is for the very reason that everything will be done by the teacher. On top of this, when the teacher has short of time so as to accomplish the specified task on a certain limited period of time, the lecture method will be the remedy.

It can be used to teach large classes. That is, as far as the teacher's presentation is audible to all students and at the same time if students do not have hearing impairments and as far as the capacity of the lecture room is suitable for this purpose, it is possible to teach a number of students even more than one hundred at a time.

It is effective to introduce new information, concepts, and principles in which students do not have sufficient previous experience; enables students to have the benefit of correct information from the teacher; and ensures systematic acquisition of knowledge if the teacher is effective in presenting the lesson.

Disadvantages

One aspect of the lecture method which causes some concern is that its effectiveness is inevitably very dependent on the skills of the individual lecturer. The ability to organize and explain a topic does not come naturally except to a fortunate few individuals, while fewer still are able to capitalize on their personal charisma in order to 'capture' their audiences.

In addition, the resultant effectiveness of a lecture relies heavily on the ability of the students to learn from it. Here, effective study skills are extremely important, and it may well be necessary to make a conscious effort to inculcate good study techniques before the full educational potential of the lecture method is realized. Recent research has shown that the amount of material remembered by students immediately after a lecture is comparatively low, ranging from a maximum of roughly 40% to a little as 5% in some cases.

The lecture method is best suited for achieving objectives of the lower-cognitive type for dealing with basic facts and principles. It is not particularly effective in achieving higher-cognitive objectives. It makes students to be passive recipients of ideas and does not encourage inquisitive or creative mind. It also does not provide students with enough opportunities to practice their oral communication skills.

Students' understanding is rarely assessed during the lecture for they are not encouraged to participate or respond. Besides, the teacher takes the leading role in the lecture method of teaching. Due to this, the teacher is limited in his/her judgment regarding the understanding of his/her students.

The lecture method has very little scope for students' activity; it is mostly one-way communication; it doesn't consider the concept of individual differences; it does not guarantee the relative permanency of learning i.e., there is high probability of forgetting; it is against the principle of "active learning or learning by doing"; and it is less effective in stimulating students' interest.

2.6.1.2. Demonstration Method (Show and Tell)

According to Walkin (1990:56), demonstration is a practical display or exhibition of the process and serves to show or point out clearly the fundamental principles or actions involved. Brown and his associates (1992) described demonstration as an audio-visual explanation, emphasizing the important points of a product, a process or an idea. It is basically an activity which combines telling, showing, and doing so as to facilitate the understanding level of students.

A demonstration is similar to the lecture in its direct communication of information from the teacher to students. It also involves a visual approach to examine processes, information, and ideas. It allows for students to observe real things and how they work. In many cases, a teacher demonstrates a certain action or activity prior to having the students perform the activity individually (Brady, 1985:64). To carry out effective demonstrations, teachers should carefully plan the demonstration, practice the demonstration, develop outline to guide the demonstration, make sure everyone can see the demonstration, introduce the demonstration to focus attention, ask and encourage questions, and plan a follow-up to the demonstration (ibid).

Although the emphasis in demonstration is learning by observing/watching the activities of the teacher, it shall be followed by doing. That is, students have to get a chance to practice and drill on different exercises. In any case, the demonstration method is a dramatic performance; the teacher being the actor and students the audience (Badgelign: 2010:148).

The demonstration method of teaching, like that of the lecture method, has strengths/advantages and weak points/disadvantages. Some of the most important ones, according to Brown and his associates (1992) cited in Badgelign (2010:150) and Walkin (1990:57) are summarized as follows:

Advantages

Because the students are made to watch the teacher's demonstration attentively, it trains them to be good observers. Ambiguities or complexities or hypothetical concepts will become clear when they are explained in conjunction with an appropriate showing or demonstration. Hence, demonstration method can stimulate or initiate thinking and promote the formulation of concepts, understandings, and generalizations.

It is an effective means as an introduction to skill learning. Recall the saying "correct practice makes perfect". It is most appropriate when teaching students how to operate, assemble or disassemble a machine or some other pieces of equipment, etc.

It enable students to acquire knowledge in the firsthand form; it connects theory with practice; it fosters creative thinking; it enable learners to develop a positive self-concept and self-confidence; it acquaint learners with subject matter knowledge and life-long skills; it trains students to be good observers; and it promote the formation of concepts, understandings, and generalizations.

Disadvantages

Active participation is reduced for students and they mainly act as observers. When the size of the class is large, particularly those students who sit at the back fail to hear what the teacher is telling them about and at the same time, they may fail to clearly observe what the teacher is showing particularly when the thing being demonstrated is so small, or may involve complexities. In short, problems of audibility and visibility may arise.

Because the teacher can spend most of his/her time while showing, telling, and doing; he/she may run short of time to examine students' understanding. That is, it is difficult to

evaluate thoroughly students' understanding during demonstration. It always asks teachers to provide a 'model' for the students to follow. It provides less opportunity for children to discover things or solve problems on their own.

2.6.2. Active Learning Methods

Active learning is an instructional strategy in which students construct meaning, often working in collaboration with other students. In this strategy, knowledge is directly experienced, constructed, acted up on or revised by the learners. So, it is a multi-directional learning experience in which learning occurs in a teacher to student, student to teacher, and student to student manner (Morable, 2000:49).

Prince (2004:1) defined active learning as any instructional method that engages students in the learning process. It requires students to do meaningful learning activities and think about what they are doing. The core elements of active learning are student activity and engagement in the learning process. Supporting this, Biadgelign (2010:153) have noted that active learning methods give much chance to the student regardless of the size of students involved in the learning session.

From this one can understand that, in active learning, the teacher has a facilitative role. The facilitative teacher plans fun, interactive learning activities; shares information and then lets participants practice what they have learned; encourages questions and discussion; and motivates participants by helping them understand how they can use what they have learned. According to Biadgelign (2010:153), active learning methods include inquiry, discovery, and laboratory methods.

2.6.2.1. Inquiry Method

The inquiry method of teaching, according to Biadgelign (2010:155), can be employed to any subject area, most of the time, at higher institutions and at secondary schools. Inquiry method can be seen, according to Joyce and Weil (1980) as cited in Dunkin (1988:63), as a process for investigating, searching, explaining, or interpreting of unusual, unknown, or

problematic situations or phenomenon. In this method, students inquire into the nature of a problem with a view of finding some answers why the problem exists.

The assumption behind using this method is that students will acquire or gain a firm grasp or understanding of the subject matter by learning that all knowledge is tentative and that, as tentative knowledge is disconfirmed, it will be replaced with new knowledge. This is due to the fact that what was true yesterday could be false today or tomorrow. Hence, teachers and students have to strive, have to dig, have to search, or in short have to inquire for the truth in the process of teaching and learning. Supporting this, Biadgelign (2010:154) states that students are expected and have to realize that statements about phenomena are based on rigorous investigation.

The success or failure of the method will very much depending on the competence, enthusiasm, and confidence of the teacher. That is, like other methods of teaching, inquiry has both good and bad qualities. These, according to Dunkin (1988:76), Brown and his associates (1992:43), Brady (1985:63), and Joyce and Weil (1980) cited in Biadgelign (2010:153) are summarized as follows:

Advantages

It tends to generate enthusiasm and interest in the students. Since students find things for themselves, they remember them better. Some researchers maintain that the method enhances critical thinking and skills of scientific investigation. Inquiry teaches the ways, steps, or procedures that may be employed in research and in inquiry activities. The how of finding answers to problematic situations can be facilitated or enhanced.

It permits teachers to model the values and attitudes essential to an inquiring mind such as in reasoning skills (observing, collecting, and organizing data; identifying and controlling variables, formulating and testing hypotheses), learning autonomy, verbal expressiveness, tolerance for ambiguity, and persistence; etc.

In this method, both the lesson content and the process of investigation are taught at the same time. Using the process of inquiry provides opportunities for students to learn and practice skills associated with critical thinking.

Disadvantages

It is time consuming. It may not be possible to use it in all situations all of the time, because some of the concepts, issues, ideas, or others may merely be explained, discussed, or lectured in class. Some researchers maintain that it is more suitable for intuitive and creative children.

2.6.2.2. Discovery Method

The discovery method, according to Bruner, Wittrock and Cronbach as cited in Brown and his associates (1992:58), has been defined in different ways. Sund and Trowbridge, for instance, take the view that discovery occurs when an individual is involved mainly in using his/her mental processes to mediate (discover) some concept or principle. Similarly, Brown (1992) cited in Biadgelign (2010:158) notes that discovery method is the mental assimilation by which the individual grasps a concept or principle resulting from physical and mental activity. MoE (1999:74) also notes that "discovery is a process of search and selection" "what is sought and selected varies with the kind of learning taking place".

Therefore, the primary emphasis is the discovery method is to know/understand the procedures than finding the answer/solution. Remember that knowing the how of the process (the problem) is more important than finding what (merely getting the answer) the problem is all about.

Obanya, Shabani and Okebukela (1996:76) defined discovery learning as a method of instruction in which the student does something beyond sitting in his/her seat and paying attention to a teacher in the classroom. Discovery method becomes more meaningful and interesting for students when activities are directed by teachers and approached inductively (which is called guided discovery): starting from the details, particulars, explanations or interpretations and then proceeding to generalizations (Biadgelign, 2010:159).

According to Hopkins (2002:3), the discovery method is characterized by the learner playing an active role in organizing the material to be learned. It focuses on the student "discovering" what is to be learned, without being given the explicit information or content by the teacher (Andrews, 1984; Blake, 1983; Bruner, 1961; and Carin, 1993) ibid. The

discovery method, like the others, has its own advantages and disadvantages. These, according to Brown and his associates (1992:64), Jacobsen and his associates (1993:35) and Obanya, Shabani & Okebukela (1996:77) are summarized as follows:

Advantages

It provides/enhances understanding as opposed to rote learning. Because the focus of discovery activities lies on observation, comparison, and explanation by students, it is more conducive for the development of thinking skills. Students are actively engaged in the process of acquiring knowledge instead of being mere recipients of ideas.

It strongly promotes student involvement and success. As a result, the discovery method helps students create the safe environment needed for motivation. That is, students are more interested in and remember better for they have found out things for themselves.

The discovery method is more meaningful and results in better retention; enhances motivation, interest and satisfaction; enhances the development of intellectual capacities, and information and problem solving skills; and helping students learn how to discover, learn and organize what they have learned.

Disadvantages

The discovery method is time consuming, because of the divergent student responses. Besides, teachers who use this method often complain that they do not have enough time to get in all the content required by their curriculum guides.

The biggest problem with this method, however, may be the skills that it demands from teachers. Teachers who employ this method must constantly be involved in decision-making and thinking. They must decide when to begin channeling the divergent responses toward their objective, pose the right questions at the right time to begin to narrow the responses, prompt and probe when necessary and do all this while monitoring the students' responses in order to formulate appropriate follow-up questions. Besides, it requires a lot of materials to be effective which again demands skill of teachers to have such materials ahead of class hours.

The discovery method has also other weaknesses such as unfamiliarity and lack of experience on the part of teachers; difficulties on the part of students specifically slow learners; arouses feeling of uncertainty in both students and teachers; and shaking the self-confidence of both.

2.6.2.3. Laboratory Method

The laboratory method, according to Lardizabel, et al (1978) as cited in Biadgelign (2010:166), can be defined as "a teaching procedure dealing with first hand experiences regarding materials or facts, obtained from investigation or experimentation. It is experimentation, observation or application by individuals or small groups dealing with actual material. Essentially, it is the experimental method enlarged and expanded".

According to Cardak, Onder and Dikmenli (2007:3), laboratory method which provides the activeness of the student, carries great value in terms of education. It is a place where new information is developed by sighting, developing ideas and interpreting the data by students. Like the other types of teaching methods, the laboratory method has strengths/advantages and weaknesses/disadvantages. These, according to Brown and his associates (1992:79) are summarized below:

Advantages

It trains students in research methods. Because students are exposed to the method, they will able to follow each and every procedure of scientific inquiry and engage in problem solving activity. Hence, having an improved understanding of the scientific inquiry and problem-solving skills will encourage students to examine ideas, concepts, or others that may seem new to them. Their critical thinking capabilities will be enhanced. Students become interested in the procedures with 'the how of' and the reasoning 'the why of'.

Students learn better and retain knowledge longer when they are practically involved in the knowledge acquiring process. Because the main principle underlying laboratory work is that students learn effectively through doing practical tasks, certainly, even the most sophisticated and/or new topics may help the students benefit from the concrete experience. The saying that reads "correct practice makes perfect" is achieved.

Disadvantages

The laboratory method is more time consuming and requires a generous supply of material and equipment. That is, it requires a large amount of time to acquire a certain new experience/skill compared to those acquired, may be by discussion or similar means. Besides, it is very expensive.

It requires careful planning and a lot of time for preparation on the part of the teacher. Teachers whose teaching program is tight cannot employ this method. Students cannot learn everything through practical experience. Because principles, laws, rules, or theories that govern practical affairs are made at the theoretical level and being merely engaged in laboratories do not make students acquire such theoretical knowledge.

2.6.3. Individualized Teaching Methods

Although individualized learning, in the form of correspondence courses and similar systems, also has a long tradition of use in education, it was only comparatively recently that it became part of mainstream educational technology and educational development. The catalyst for this was behavioral psychology, whose methods were first applied to education by B.F. Skinner and his followers during the 1950s (Ellington, 1996:81).

Skinner's work on the application of the stimulus/response mechanism represented, in many people's view, the first truly 'scientific' theory of learning. First, it triggered off the bandwagon programmed learning movement that dominated progressive educational thinking during the 1960s. Since then, it has led to the development of a wide range of individualized-learning techniques – such as tape-slide and the various computer-based and multimedia systems that are now achieving more and more widespread use (ibid).

As in the case of the earlier 'mass-instruction' movement, the individualized-learning movement failed to live up to most of its early promise. During the 1960s, some programmed learning enthusiasts were predicting the early demise of the traditional classroom teacher or lecturer, claiming that they were developing as delivery systems for their programs. These teaching machines conspicuously failed to live up to expectation, however, partly because high-quality software was never produced in the quantities that

would have been needed for them to make any real impact, and partly due to the increasing realization that there was much more to education than the teaching of facts and principles. Nevertheless, the individualized-learning movement has had a tremendous influence on educational thinking, and the various techniques that it has made available once again form a vital section of the modern educational armory. With the current spread of distance learning, flexible learning, computer-based learning and multimedia, such techniques seem certain to achieve even wider use in future. Indeed, they may well replace the lecture as the dominant mode of instruction in tertiary education (Biadgelign, 2010:170).

Some of the main teaching methods, according to Ellington (1996) cited in Biadgelign (2010:171-189), that fall under the general heading of individualized-learning methods are directed study of material in textbooks, paper-based self-study materials, self-instruction via mediated materials, computer-based learning and multimedia, and individual assignments and projects.

2.6.3.1. Directed Study Material in Textbooks

Conventional textbooks, handout notes, journal articles and other printed materials can often be used in self-instructional situations, although, they may not necessarily be suitable for enabling mastery of desired material to be achieved. This is because most textbooks, handouts, etc., are designed simply to present information, not to provide the users with a systematic learning program. Also, it is very rare to find a single textbook that covers all the material in a course or module in the manner that the person responsible for teaching that course or module requires. The effectiveness of textbooks as vehicles for self-instruction is greatly increased by the use of a suitable study guide which structures the learning process for the students by directing them to suitable chapters or sections thereof in appropriate books in a systematic and cumulative way, provides supplementary notes and assignments, etc.

According to Knowles (1975:2), directed learning assumes that learners are motivated by internal incentives, such as the need for self-esteem, the desire to achieve, the urge to grow, the satisfaction of accomplishment, the need to know something specific, and curiosity.

Directed study material textbooks have their own strengths and weaknesses. Theses, according to Ellington (1996) cited in Biadgelign (2010:171) are summarized below:

Advantages

In the case of certain core subject areas, the course material may well be adequately covered in normal textbooks, and, if so, such books represent one of the cheapest and most convenient sources of self-instructional resource materials. Provided that suitable texts are available and the work is carefully structured, directed study of such textbooks can be a highly effective way of teaching basic facts, principles, applications, etc. that is, of achieving objectives mainly of the lower cognitive type. The method can also be used to achieve higher cognitive and some non-cognitive objectives.

It allows learners to work at their own natural pace. Research has shown that learners differ considerably in the rate at which they can assimilate new material effectively; so, any method that allows self-pacing to take place is almost invariably more effective than a method like the lecture in which they all have to work at the pace directed by the instructor.

Another advantage is that it requires no specialized hardware or other facilities, and no specialized courseware other than standard textbooks. The latter can either be purchased by the students or made available through a suitable library.

A further advantage of the method is that study can be carried out at any time suitable to the learner, and provided that the textbooks involved are not restricted to 'reference only' use within a library in any convenient place.

Disadvantages

One possible disadvantage of the method is that it requires extremely careful planning and structuring on the part of the supervising teacher if it is to be fully effective. This, obviously, requires both skill and time.

The method is also totally dependent on suitable texts being available. In some cases, it may be possible to insist that all students purchase their own copies of the book or books involved, but, in many cases, this will not be a realistic option.

The method is not really suitable for achieving some higher cognitive objectives and many non-cognitive objectives. Also, unless a deliberate attempt is made to build in participative student activities through the study guide, study of material in textbooks can be a very passive form of study, with little or no interaction taking place between the learner and the learning materials. This can lead to boredom and lack of motivation on the part of the students.

2.6.3.2. Paper-Based Self-Study Materials

One of the drawbacks of using textbooks in self-instructional situations is that they may well be inappropriate either in terms of their level or in terms of their treatment of the subject matter, thus making it unlikely they will match the objectives of the course and meet the requirements of the students. Use of carefully prepared and structured hand-out notes produced by the teaching staff offer one means of getting round this difficulty, although the problem of low student interaction with the material may still be present unless deliberate steps are taken to counteract it. One way of increasing student interaction with textual materials of this type is to produce them in the form of what are commonly known as open-learning-packages - specially-designed, interactive self-study materials of the type used in open-learning systems. Although not many people can produce such materials, the advent of desktop publishing now makes it easy for anyone to generate well-laid-out, user-friendly self-study packages (Ellington, 1996) cited in (Biadgelign, 2010:172). Paper-based self-study materials also have strengths and weaknesses. These, according to Ellington (1996) cited in Biadgelign (2010:173-174), are summarized below:

Advantages

Paper-based self-study materials of the open-learning type have essentially the same strengths as directed study of material in textbooks, and can be even more effective if the materials are well prepared. Well-designed open-learning packages also allow students to learn in an interactive way, learning by doing, and drawing feedback from the responses built into the materials. Learners use the materials at their own pace and normally at times and places of their own choosing. Learners can work again and again through difficult parts of an open-learning package, until they have mastered its contents. The best open-learning

packages are written in 'user-friendly' language, helping to ensure that learners find them stimulating and interesting.

Modern open-learning packages are usually also carefully planned in terms of their layout and design, the object being to make them as attractive and 'user-friendly' as possible. The content can also be adjusted to be directly relevant to the intended learning outcomes. Open-learning packages usually also make it very clear to learners exactly what they are intended to be able to do after completing their study of the packages, either by including a detailed list of objectives for the packages, or by expressing the intended learning outcomes in terms of the competences that the learners will be expected to be able to demonstrate when they have worked through the package.

Disadvantages

The main disadvantage of the method is that the task of producing effective materials is inevitably extremely time-consuming, and also requires a great deal of skill on the part of the writer. This is doubly true in the case of fields such as electronics and computer science that are in a more-or-less continuous state of change, since writers of individualized-learning materials in such fields are faced with the on-going problem of keeping their material up-to-date; indeed they can be faced with a never-ending task.

Another major limitation of the method is that, like directed study of textbook material; it is not really suitable for achieving some higher-cognitive objectives and many non-cognitive objectives.

A third disadvantage of the method is that it can become extremely boring to students if it is over-used. Also, by the very nature of the method, students do not have the opportunity to learn from one another unless steps are taken to provide room for student interaction, for example, through self-help groups or other group activities.

2.6.3.3. Self-Instruction via Mediated Materials

Self-instruction refers to a process in which materials take learners step-by-step through an instructional process; self-assessment exercises are a central feature; and instruction can be paper-based or computer-based. It consists of print materials and audio cassettes.

Computer- assisted and web-based learning is often purely self-instructional (COL, 2000:3).

Although print-based self-instructional materials still have an important place in most individualized-learning systems, many self-instructional learning packages now utilize a whole range of audio and visual media to increase their impact and effectiveness. Such packages may include audiotapes, videotapes, slide sequences, photographs, models, practical kits, tools and instruments as well as conventional printed materials, the particular media mix being carefully chosen with the objectives of the topic being covered in mind, the nature of the tasks to be discharged, and based on the ability of students.

A range of hardware of varying degrees of sophistication is available for use with the different types of software mentioned above. A wide variety of expensive automatic playback machines can be purchased for use in instructional libraries and resource centers. However, for students working on their own at home, suitable combinations of relatively inexpensive items of equipment [cassette players, simple slide viewers, etc] are generally just as effective from an educational point of view. This method, like others, also has its strengths and weaknesses. These, according to Ellington (1996) cited in Biadgelign (2010:175-176) are summarized below.

Advantages

Because of the wide range of media available, audio-visual self-instructional materials can be used to achieve a wide variety of educational objectives, and, although these again tend to fall mainly in the lower-cognitive range, it is possible to use them to achieve other types of objectives. By associating manipulative tasks with such materials, for example, they can be used to develop certain types of psychomotor skills, and they can also be highly effective in achieving certain types of affective objectives. They allow learners to work at their own learning pace.

They also allow a high element of learner participation to be built into the learning process. Also, use of appropriate media enables things like sound, movement, and realism to be introduced into a presentation, thus again increasing student interest and motivation. Use of

well-designed mediated presentations can save instructors from having to carry out a great deal of time-consuming, repetitive work.

Disadvantages

The main weakness of the approach is that suitable ready-made courseware is seldom available; so, instructors may have to produce their own. This is invariably time-consuming, often expensive, and in many cases requires specialist skills that the average teacher simply does not possess. In some cases, it may be possible to acquire the required skills by undergoing suitable staff development but in other cases it may be necessary to rely on specialist support staff.

Although mediated self-instruction can be used to achieve a somewhat wider range of objectives than self-instruction based purely on the study of textual materials, there are still some higher-cognitive and non-cognitive objectives for which the method is inappropriate.

By its very nature, mediated self-instruction also relies totally on the availability of suitable hardware. In many cases, provision of sufficient hardware to enable extensive use of the method to take place may simply not be possible because of its cost or due to lack of space for the provision of suitable study stations.

2.6.3.4. Computer-Based Learning and Multimedia

It has been claimed that the development of the modern microcomputer and its use in the various forms of computer-based learning constitutes the most important development in educational technology since the invention of the moveable-type printing press back in the 15th century. Whether or not this is the case, there can be no doubt that the computer has the potential to make a tremendous impact on educational practice, particularly in the field of self-instruction (Ellington, 1996).

Multimedia refers to the use of multiple media elements such as text, graphics, motion, voice data, sound, animations and digital video (Neo, 1997; Moore et al., 1994) cited in Muhamad, Mansor and Lily (2010:3). Since these media can now be integrated using a computer, there has been a virtual explosion of computer-based multimedia instructional applications (Najjar, 1995:4). Multimedia is being used increasingly to provide computer

based instruction. Supporting this, Mayer and Moreno (2001:1) note that computer-based multimedia learning environment consist pictures (such as animation) and words (such as narration) that offer a potentially powerful venue for improving student understanding.

As a result of the rapid development of the information and communication technology, the use of computers in education has become inevitable. The use of technology in education provides the students with a more suitable environment to learn, serves to create interest and a learning centered-atmosphere, and helps increase the students' motivation (Isman, Baytekin, Balkan, Horzum, & Kiyici, 2002) cited in Serin (2011:1). This method, like the others, has its own strengths and weaknesses. These are summarized as follows from Ellington (1996) cited in Biadgelign (2010:176-177).

Advantages

Whether it is employed in the 'substitute-tutor' mode or in the 'simulated laboratory' mode, use of the computer as a delivery system for self-instruction materials enables an extremely wide range of educational objectives to be achieved, although these tend to fall mainly in the lower-cognitive area. Use of the computer can also provide a wide range of otherwise inaccessible learning experiences through computer simulations.

It enables an extremely high degree of learner participation to be built in to the instructional process ,and also enables the system to adapt to the needs of the individual learner in a way that is simply not possible with other delivery systems, thus, providing opportunity for 'learning by doing'; coupled with the benefits of immediate feedback to learning .

It can allow on-going assessment and monitoring to take place automatically if this is thought appropriate. By these means, students can obtain rapid feedback, and staff can spend less time on marking. It uses the natural information processing abilities that we already possess as humans. Our eyes and ears, in conjunction with our brain, form a formidable system for transforming meaningless sense data into information.

Disadvantages

Computer-based learning has the same basic weaknesses as mediated learning in terms of general lack of availability of suitable ready-made courseware, total dependence on the availability of appropriate hardware and the fact that it is not suitable for use in achieving certain types of higher-cognitive and non-cognitive objectives. It requires computer literacy and a degree of programming skill on the part of the person designing the materials.

Multimedia requires high-end computer systems and good quality computers. Sound, images, animation, and especially video, constitute large amounts of data, which slow down, or may not even fit in a low-end computer. It may not be accessible to a large section of its intended users if they do not have access to multimedia-capable machines.

While proponents of this new technology are very enthusiastic about its potential, they often leave the financial and technical issues unattended. Development costs in multimedia are very high and the process of developing effective multimedia takes time. Time spent on developing the costs multimedia package requires money so that the true cost of an interactive programme mounts with each delay. And finally, training of the educator who is unfamiliar with the production and design of multimedia courseware or packages can be equally complicating.

2.6.3.5. Individual Assignments and Projects

Virtually all educationalists agree that the most effective way of bringing about lasting student learning is to get students actively involved in the learning process. To this end, asking students to carry out individual assignments, projects, etc is one of the most effective ways of doing this. They are, however, also extremely powerful vehicles for bringing about learning-often at a very high level-and should therefore be regarded as teaching/learning methods in their own right.

A project method is a practical and natural life like learning involving the investigation and solving of problems by individual or a group of trainees. Ideally, project work should consist of a task in which a trainee sets out to achieve some definite goal of real personal value MoE (1999:84). It also exposes students to natural settings to investigate things and

come up with new findings or concrete products (Obanya, Shabani and Okebukela, 1996:70).

Moreover, Walkin (1990:58) notes that a project may be set either as an individual task or a small group undertaking. The project may be designed as the learning process in which group members are faced with new concepts and unfamiliar activities or as a device for the integrating of several previously mastered individual skills. Individualized learning methods, have their own strengths and weaknesses .These, according to Ellington (1996) cited in Biadgelign (2010:179) and Walkin (1990:59) are summarized as follows:

Advantages

The greatest strength of this approach is that it is externally versatile, and can be used to achieve virtually all types of learning objectives: lower-cognitive, higher-cognitive, affective, psychomotor and interpersonal aspects. Indeed, assignments and projects are probably the most effective method of achieving high-level and multi-faceted learning objectives, for instance, developing problem-solving and other life skills.

Another strength stems from their intrinsically high student involvement and high level of activity, both of which help to ensure that effective learning invariably takes place when work of this type is carried out properly. They can be stepped up incrementally, and designed both to support the weak and to stretch the able ones.

The project method encourage independent study and brings about new discoveries; help students to acquire skills of investigation; make learning meaningful; gives a teacher more time for other class routines; and keeps students busy.

Disadvantages

One of the obvious weaknesses of the method is that it requires detailed individualized feedback to be given to the students if it is to be really effective as a vehicle for promoting learning. This makes heavy demands on teaching staff time, and, if an electronic medium is used, also requires appropriate security measures to be implemented.

It is also too easy to overload or swamp students with work if they are asked to carry out too many exercises of this type, especially if they are not properly spaced out. Thus, it is essential that members of course teams give some thought to the overall assignment workload that is imposed on their students, not simply to the assignments that they themselves set. A further weakness is that assignments may prove difficult to cost, particularly if realistic opportunity costs are to be taken into account.

The project method is difficult in the absence of resources; a student can copy some body's work or hire someone to do the project; doesn't take care of individual difference; and time consuming.

2.6.4. Group Teaching Methods

While it can be argued that the individualized learning phase of educational technology probably had a greater impact on modern education and training than the mass instruction phase that preceded it, there are, in practice, a number of limitations to the approach. One of the most obvious stems from the fact that it is, by definition, individual, and, as such, cannot enable students to interact with one another and develop group skills such as discussion skills, interpersonal skills and the various other skills needed to collaborate effectively with other people in carrying out a common task or project (Biadgelign, 2010:179).

Group teaching methods are concerned with how people interact with and learn from one another in small-group situations, and involve the use of the methods of group dynamics. One of the best example of this methods of teaching is the discussion method.

Discussion method covers classroom learning activities involving active and cooperative consideration of a problem or topic for treatment. It, according to Brown, et al (1992:86), is characterized by increased involvement and active participation of members of the class, i.e. students. A more or less maximum active verbal interaction among students of a group is the main feature that distinguishes this method from other teacher-dominated procedures (Brown et al, 1992:89 and Dunkin, 1988:74).

In the discussion method, all learners are given frequent opportunities to generate and share ideas and to analyze, evaluate and conclude on a given topic in small and whole class settings (Obanya, Shabani and Okebukela, 1996:86).

The discussion method has a wider application in arts and social sciences than in others (Dunkin, 1988:75 and Brown, et al, 1992:89). Nonetheless, this does not mean that it cannot be employed in natural sciences. It can be. This method is most appropriate when there are controversial or debatable issues in any subject.

The responsibility for communication is shared by the teacher and the students. The teacher assumes responsibility for initiating the topic of discussion, providing students with common experience upon which to base their participation, stimulating students to think critically, and reminding students of where the group has progressed in relation to their stated goals. The students assume the responsibility for contributing their individual thinking, investigations, and conclusions to the group effort (Azeb, 1984:219). Group learning method like the other methods has both good qualities/advantages and disadvantages. These, according to Dunkin (1988:76), Brown and his associates (1992:91), and Ellington (1996) are summarized as follows:

Advantages

It provides an excellent opportunity for students to practice their oral communication skills, for students are required to forward their views, opinions or ideas in their own words according to their understanding.

It gives students time to practice critical and evaluative thinking and to listen to others. This will take place due to the fact that; a student has to present logical reasoning, illustrations, possible or alternative solutions for the case under discussion. Students seem to learn more readily from each other. They get a chance to share experiences; or usually, the relatively less able ones may get the advantage of learning from their colleagues.

It provides good practice for problem-solving. This holds true for the fact that the procedures and the different activities that can be employed in the discussion and problem-solving are so much alike. In both cases, students are expected to identify the rationales

behind, gathering data, forwarding and examining possible solutions, deciding and the like. This is for the very reason that each group tries to convince the other by logical and reasonable arguments in respect of the rights of the other.

One of the main advantages of the group learning method is its great versatility, together with the fact that it enables an extremely wide range of educational objectives to be achieved. The approach is especially strong in achieving higher-cognitive objectives of all types, particularly multi-faceted objectives related to problem-solving, decision-making and other complex life skills.

It also helps students to develop desirable attitudinal traits such as open-mindedness and willingness to listen to other people's point of view, and for developing transferable process skills such as communication and general interpersonal skills.

Disadvantages

Group learning often requires the participants to attend briefing or debriefing sessions or to carry out preliminary work can cause complications. It is sometimes difficult to assess student performance fairly, or to evaluate the effectiveness of group learning other than on a subjective basis.

They require the active cooperation of the participants if they are to succeed. In some cases, however, this cooperation may not be forthcoming. Students may, for example, simply not turn up for the session because they feel that it will be a waste of time or are afraid of taking part. In other cases, they may be reluctant to make the very real personal commitment that many group learning exercises require, because they do not feel that they have the necessary skills and do not want to 'show themselves up' in front of their peers.

It does not easily lend itself to all types of subjects or topics. That is, it is so much difficult particularly in such subjects as physical sciences, mathematics, or engineering for the teacher to find controversial or debatable issues most of the time. Put another way, the choice of a suitable topic is the problem of the teacher. It is difficult to achieve maximum interaction when the group size is large. Each student does not get a chance to express his/her views, ideas, or opinions.

It may give opportunities for brighter students to show off. That is, the relatively better students and those who need to talk much can take the time or may dominate the others. This can make the relatively less able students or slow learners to hide themselves or withdraw from the discussion group which in turn may frustrate such students.

2.7. The Concept of Quality

According to DAAD (2007:30), there is no general consensus on the concept of quality. An objective definition of quality does not exist. Supporting this, Firdissa (2009:17) notes that whereas quality is an everyday word of today, it has no clear-cut conception and there is no consensus view on 'what is meant by quality?' Arguably, many people often talk of quality, but they hardly explicate what it really signifies. By implication, defining quality is not an easy task. According to Ellis (1995:4), the working definition of quality might be, it refers to the standards that must be met to achieve specified purposes to the satisfaction of customers. Supporting this, Derebssa (undated:1) notes that quality influences what students learn, how well they learn and what benefits they draw from their learning. Whether a particular education system is of high or low quality can be judged in terms of input, output and process.

Quality is relative and not easy to define and measure. Many educators agree that an adequate definition of quality of learning must be related to students' achievement (output) as its basis. In the context of schooling, the concept of quality is linked to how efficiently learning takes place. This is believed to be strongly determined by the teaching and learning style taking place at the classroom level, teachers' subject knowledge and pedagogical skills, the availability of textbooks and other learning materials including the time spent by pupils actually learning their lessons (UNESCO, 1993) cited in Derebssa (undated:5).

2.7.1. Standards of Quality

What is commonly employed in the higher learning institutions as a way of checking quality is setting minimum standards on the educational processes, such as the qualification of the academic staff, the organization of curriculum and other resources, using student

evaluation of teaching although there is differences in implementation and utilization (Aschroft, 2005:46). She also suggests the following standards: academic standards, standard of competence, and service standards.

Academic standards measure ability to meet specific levels of academic attainment in relation to teaching and learning. Standard of competence measures specific levels of ability on a range of competencies which include the general transferable skills required by employer and skills required for induction in to a profession. Service standards measures identified elements of the service provided by higher education institutions. The three standards are, however, only defined within the context of an institutional mission.

Because of this reason, the performance of HEI can be assessed on input-process-output procedures (ibid pp. 47). Input standards include academic staff, curriculum design, learning resources, building facilities and provisions, instructional materials, students, instructors, financial capital, ICT, and student intake. Process standards include methods of teaching, the teaching/learning process, curriculum relevance, learning environment, academic and management. Output standards are the backbone of any quality system and refer to the standards that students achieve and the extent to which these are comparable across subjects and with higher education institutions in other countries. It helps to measure the extent to which inputs and processes are contributing to achieving the goals of higher education because the impact of learning manifests the status of graduates.

According to Bergmann and Mulkeen (2011:8), standards can be classified into input standards, process standards and outcome standards. Input standards refer to resource inputs and typically include standards for physical infrastructure, student-teacher ratio and textbook provision. Process standards are concerned with less quantifiable factors, such as the quality of teaching, the management of the school and the relationship with the community. Outcome standards refer to the student learning outcomes.

2.7.2. Quality Indicators

According to Shavelson et al (1987:10-11), there are three indicators of quality in higher education institutions. They include input, process and output indicators. Input indicators of quality include government policies and state legislation, the quality of academic staff, academic staff/student ratio, terms of employment of academic staff, financial resources, and libraries, ICT and other educational facilities. Process indicators of quality include governance, leadership and management system, relevance of curricula, methods of teaching, and assessment methods. Output indicators of quality include students' acquired skills and knowledge, employability of graduates, happiness and satisfaction, social functioning and learning dispositions.

According to Ellis & Calvo (2007:4), quality indicators for quality student learning include leadership and ongoing funding, policy, evaluation services, support for teaching and learning with ICTs, support for planning, design, and development with ICTs (integrating ICTs into student learning experiences), and the decision to develop or redevelop a course with ICT.

Performance is an indicator of quality of student learning. There are four types of performance indicators of quality such as Input, Process, Output, and Outcome (Borden, & Bottrill, 1994; Carter, Klein & Day, 1992; Cave, Hanney & Kogan, 1991; Richardson, 1994) cited in OECD (2008:4-6).

Input indicators reflect the human, financial and physical resources involved in supporting institutional programmes, activities and services. Process indicators are those which include the means used to deliver educational programmes, activities and services within the institutional environment. These measurements look at how the system operates within its particular context, accounting for institutional diversity. It include policies and practices related to learning and teaching, performance management and professional development of staff, quality of curriculum and the assessment of student learning, and quality of facilities, services and technology. Output indicators reflect the quantity of outcomes

produced, including immediate measurable results, and direct consequences of activities implemented to produce such results. Outcome measures focus on the quality of educational program, activity and service benefits for all stakeholders. These key stakeholders include students, parents, the community, employers and industry.

2.7.3. Factors Affecting Quality of Learning

According to Lianxiang and Houxiong (2007:825), factors affecting higher education quality learning are various. They include professional fatigue of individual teacher, fall in enrollment quality and anxiety-ridden learning atmosphere, inadequate investment in education and resulting out-dated teaching facilities and experiment instruments, unreasonable curriculum setting and obsolete content, and teaching management problems.

Most debates on the quality of learning include concerns about a student's level of achievement, the relevance of learning to the world of employment or the social, cultural and political worlds occupied by the student. Frequently they often also include concerns about the conditions of learning, such as supply of teachers or facilities. Grisay and Mahlck (1991) cited in Derebssa undated:5) argue that the notion of quality should not be limited to student results alone but should also take into account the determinant factors which influence these, such as the provision of teachers, buildings, equipment, and curriculum. As such, the general concept of quality of learning is made up of three interrelated dimensions. These are: the quality of human and material resources available for teaching (inputs), the quality of teaching practices (process), and the quality of results (outputs and outcomes).

According to OECD (2008:80), factors influencing quality teaching include the national context, institutional structure, student profile, teacher training, and use of information technology. According to UNICEF (2000:5), quality is determined by the following factors learners such as learners who are healthy, well-nourished and ready to participate and learn, and supported in learning by their families and communities; environments that are healthy, safe, protective and gender-sensitive, and provide adequate resources and facilities; content that is reflected in relevant curricula and materials for the acquisition of basic skills,

especially in the areas of literacy, numeracy and skills for life, and knowledge in such areas as gender, health, nutrition, HIV/AIDS prevention and peace; processes through which trained teachers use child-centered teaching approaches in well-managed classrooms and schools and skilful assessment to facilitate learning and reduce disparities; and outcomes that encompass knowledge, skills and attitudes, and are linked to national goals for education and positive participation in society. Therefore, these all things have their own effect on quality of student learning.

Quality is affected by the inputs such as building facilities and provisions, instructional materials, students, instructors, financial capital, ICT, academic staff, and student intake (Smeenk and Teelkun, 2003:75). Moreover, an organization's process reflects the nature of the intra-institutional interaction of students, faculty and inputs to reach educational goals and objectives (Assefa, 2002:35). The process of higher education consists of methods of teaching, the teaching-learning process, curriculum relevance, learning environment, academic and management (Stoll, 2005:233). The output of higher education helps to measure the extent to which inputs and process are contributing to achieve the goals of higher education because the impact of education manifests itself the status of graduates. For example, graduate profiles, performance on standardized tests, cost-effectiveness, and employment rate of graduates and level of performances (Assefa, 2004:39; Stoll, 2005:247).

No change is possible without right leaders and managers in government, its agencies and higher education institutions (MoE, 2004b:102). The governance, leadership and management of Ethiopian higher education system prior to 1994, and in particular between 1974 and 1994, were largely characterized by heavy handed and more direct government inference in institutional affairs. The situation has improved after the adoption of the new Education and Training Policy (ETP, 1994:29) and strengthened after the promulgation of the higher education proclamation.

The effectiveness of any organization depends largely on the effectiveness of its management and the governance arrangements. The process of coordinating and integrating work activities are completed efficiently and effectively with and through people (Rosenstone, 2004:93). This indicates that effective management brings about efficiency of an institution.

Institutional leadership mainly focuses on articulation of vision, mission, setting direction, challenging the status quo and creating something new and better as well as the management type in terms of ensuring system stability, planning and supervision to do things right are of paramount importance (Rosenstone, 2004:89; Teshome, 2007:50). The greatest problem higher learning institutions face is lack of leadership competencies due to the fact that leaders are appointed on the basis of seniority without appropriate training and qualification that are required for higher education settings (Olusola, 2007:59).

In HEIs, institutional autonomy should be respected, academic freedom within the law should be protected and governance arrangements should be open/transparent and responsive (Teshome, 2007:50). Thus, leadership is critical in success of an institution in terms of fulfilling its missions and meeting societal expectations.

CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

This Chapter deals with design of the study, sources of data, sample population and sampling techniques, instruments of data collection, procedures of data collection, and data analysis.

3.1. Design of the Study

A descriptive survey design was used so as to assess the teaching methods and their implications for quality of student learning at Samara University. The design was selected on the assumption that it is helpful to gather enough information from many people on the issues under study. The appropriateness of this design for such study was noted by many scholars. For example, Koul (1996:405) states that descriptive survey design becomes useful particularly where one needs to understand some particular information. Best and Khan (1989:18) have noted that a descriptive survey research design involves a clearly defined problem and definite objectives.

3.2. Data Sources

In this study, both primary and secondary sources were used to gather adequate information about the teaching methods and their implications for quality of student learning at Samara University.

Primary sources were used to get first-hand information concerning the methods of teaching and their implications for quality of student learning at Samara University. The primary sources were University students, teachers, and faculty deans. The secondary sources were used to strengthen the primary sources. They include books, journals, and articles. The internet was used to avoid the inadequacies of the data and to make the study reliable.

3.3. Sample Population and Sampling Technique

The sample area of the study, Samara University, is found in Afar National Regional State. The University comprises 256 teachers of which 243 were males and 13 were females; 2579 students (second and third year) of which 2289 were males and 290 were females; 18 departments; and 4 faculties. The number of first year students was not known. That was why they were not included in the study. The sample must be of an optimum size i.e., it should neither be excessively large nor too small. This is because it should be large enough to be representative of the population and small enough to be economical in terms of time, money and complexity of analysis (Best and Khan, 1989:16). All faculty deans were included using availability sampling technique because their number is very small. Vanderstoep and Johnston (2009:49) state that availability sampling involves selecting people who are available or convenient for the study. Supporting this, Singh (2006:99) also states that availability sampling is applied to those samples that are taken because they are readily available or because the researcher is unable to employ more acceptable sampling methods.

Moreover, if the population size is around 500, 50% of the population should be sampled (Leedy and Ormrod 2005:207). Therefore, from 256 teachers, 128 teachers were selected using simple random sampling technique. If the population size is around 1500, 20% of the population should be sampled (Leedy and Ormrod 2005:207). Therefore, from 2579 students, 516 students were selected using simple random sampling technique. The simple random sampling technique was preferred because every member of the sample population will get an equal chance to be selected. Supporting this, Leedy and Ormrod (2005:201) state that in simple random sampling technique each member of the population has an equal chance of being selected.

3.4. Instruments of Data Collection

A questionnaire, an interview, and document analysis were the main data gathering instruments. This was because of the need to collect adequate data and for triangulation purpose. Therefore, employing multiple data collection instruments helps the researcher to

combine, strengthen and amend some of the inadequacies of the data and for triangulating it (Cresswell, 2003:62).

3.4.1. Questionnaires

Questionnaires were used to collect relevant and first-hand information from key informants such as teachers and students. The items of the questionnaires were mainly close-ended questions and accompanied by some open ended ones. The reason why a questionnaire was used was that it is easier to handle and is simpler for the respondents to answer within a short period of time (Koul, 2008:146).

3.4.2. Interview

Structured interview was used to collect data from faculty deans. The reason why structured interview was employed was that the procedure to be used is standardized and determined in advance as well as to obtain answers to carefully phrased questions (Koul, 2008:176). Using this instrument is important to get thick data about the issue under study.

3.4.3. Document Analysis

Document analysis was also used to gather necessary information about methods of teaching and their implications for the quality of student learning. This was to strengthen the data obtained through questionnaires and interview. Due to this reason, journals, books, and articles were seen because they are important sources of data to explore educational practices. Supporting this, Best and Khan (1989:25) have noted that document analyses are important and relevant sources of data, and useful in yielding information and exploring educational practice.

3.5. Procedures of Data Collection

To assess methods of teaching and their implications for the quality of student learning in the study area, first questionnaires and structured interview were developed. Then, they

were pre-tested (piloted) being administered to 10 teachers and 10 students of Samara University in different fields of study. Accordingly, with some modifications and clarifications, the final instruments were developed and used for the purpose. The questionnaires were designed and administered by the researcher to teachers and students. An interview was also conducted through disclosing the purpose of the study based on the permission and willingness of the participants by the researcher. Finally, document analysis was made by the researcher himself.

3.6. Data Analysis

Different statistical techniques were employed on the basis of the nature of the data collected. Consequently, the data collected from the respondents were analyzed quantitatively and qualitatively. In analyzing the quantitative data, respondents were categorized and frequencies were tallied. Percentage and frequency counts were used to analyze the characteristics of the population as it helps to determine the relative standing of the respondents. Moreover, mean scores, standard deviations, independent sample t-tests, and rank correlation were used for analyzing the questionnaires with five point Likert scales to assess methods of teaching and their implications on quality of student learning at Samara University.

The scale was interpreted as 5= Strongly Agree, 4= Agree, 3= Undecided, 2= Disagree, and 1= Strongly Disagree. For the purpose of easy analysis and interpretation, the mean values of each item and dimension were interpreted. The mean values from 1.00-2.49 were represented as low, from 2.50-3.49 as moderate, from 3.50-4.49 as high, and from 4.50-5.00 as very high implementations of the items.

In analyzing the data obtained through an interview, first summary sheets were prepared and field notes were written and the content of the responses were analyzed. The documents such as journals, books, and articles were also used in data analysis. To this end, analysis and interpretations were made on the data obtained through questionnaires, interview and document analysis.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This Chapter deals with the presentation, analysis and interpretation of the data collected through questionnaires, interview, and document analysis. The Chapter consists of two parts. The first part is concerned with the description of the background characteristics of the respondents of the sample population. The second part is concerned with the analysis and interpretation of the main data.

4.1. Background Characteristics of the Respondents

The questionnaires were administered to 516 students and 128 teachers. From these 469 students and 114 teachers returned, of which 440 and 110 papers were used for analysis and representing an overall response rate of 85.27 % and 85.94% respectively. The background information of teachers (n = 110) and students (n = 440) who completed properly and returned the questionnaires were indicated hereunder.

Table 1: Background information of sample teachers in the study by faculty, gender and age

Variables	Category	n	Percent (%)
Faculty	Social Science and Humanities	36	32.7
	Natural and Computational Science	31	28.2
	Business and Economics	21	19.1
	Dry Land Agriculture	22	20.0
	Total	**110**	**100.0**
Gender	Male	101	91.8
	Female	9	8.2
	Total	**110**	**100.0**
Age	21-25	44	40.0
	26-30	49	44.6
	31-35	7	6.4
	36-40	4	3.6
	Above 40	6	5.4
	Total	**110**	**100.0**

It can be depicted from the Table that the number of samples selected from each faculty is almost proportional to each other with slight differences. That is, the percentages of sample

teachers in Table 1 from Social Sciences and Humanities, Natural and Computational Science, Business and Economics, and Dry Land Agriculture faculties are 32.7%, 28.2%, 19.1%, and 20.0% respectively.

The information in the Table also reveals that 91.8% and 8.2% of the teachers were males and females respectively. Therefore, the number of female teachers is fewer than that of male teachers. Hence, this indicates that the great majority of the teachers in the sample areas of the study were males showing that the work environment was male dominated.

Regarding the age of the respondents, 40% of the teachers were between 21 and 25 years and 44.6% of the teachers were between 26 and 30 years. The rest of the teachers 6.4%, 3.6% and 5.4% were between 31 and 35 years, 36 and 40 years and above 40 years respectively. This shows that the vast majority of the teachers were very young.

Table 2: Background information of sample teachers in the study by educational level, teaching experience and workload

Variables	Category	n	Percent (%)
Educational level	BA/BSc/BED	41	37.3
	MA/MSc	69	62.7
	Total	**110**	**100.0**
Teaching experience in year	< 2 years	60	54.5
	2-5 years	50	45.5
	Total	**110**	**100.0**
Workload	< 6 chr/week	14	12.7
	6-11 chr/week	64	58.2
	12-18 chr/week	31	28.1
	> 18 chr/week	1	0.9
	Total	**110**	**100.0**

With regard to the educational level of the respondents, 37.3% of the teachers were first degree holders and 62.7% of them were second degree holders. Regarding this, the Senate Legislation of Samara University (2008:31) stated that the University staffs shall endeavor to attain the required level of qualification/competence and expertise in their respective discipline; and maintain and improve such competence and expertise by keeping abreast with the new developments and changes in their respective fields of study.

As to the teaching experience of the respondents, the majority of the teachers (54.5%) had teaching experience of less than two years, and 45.5% of them had teaching experience between two and five years. This, therefore, indicates that the majority of the teachers had relatively little teaching experience.

Regarding the teachers' workload in credit hour/week, 12.7% of the teachers had a workload less than six credit hours/week while 58.2% of them had a workload between six to eleven credit hours per week. Twenty eight point one percent and 0.9 % of teachers had a workload between 12 and 18, and above 18 credit hours per week respectively. This, therefore, shows that the majority of teachers (58.2%) had a workload between 6-11 credit hours per week.

Table 3: Background information of sample students in the study

Variables	Category	n	Percent (%)
Faculty	Social Science and Humanities	145	33.0
	Natural and Computational Science	121	27.5
	Business and Economics	93	21.1
	Dry Land Agriculture	81	18.4
	Total	**440**	**100.0**
Gender	Male	315	71.6
	Female	125	28.4
	Total	**440**	**100.0**
Age	15-20	167	38.0
	21-25	228	51.8
	26-30	13	3.0
	31-35	27	6.1
	Above 35	5	1.1
	Total	**440**	**100.0**
Year	Second	237	53.9
	Third	203	46.1
	Total	**440**	**100.0**

Table 3 shows that 33%, 27.5%, 21.1%, and 18.4% of students were from faculties of Social Sciences and Humanities; Natural and Computational Science; Business and Economics; and Dry Land Agriculture respectively. This shows that the majority of the students were in the faculties of Social Sciences and Humanities, and Natural and Computational Science.

Regarding the gender of the respondents, 71.6% of students were males and 28.4% of students were females. Therefore, the number of female students is fewer than that of male students. Hence, this indicates that the majority of the students in the sample areas of the study were males showing that the learning environment was male dominated.

Regarding the age of the respondents, 38% of the students were between 15 and 20 years and 51.8% of the students were between 21 and 25 years. The rest of the students 3%, 6.1% and 1.1% were between 26 and 30 years, 31 and 35 years, and above 35 years respectively. This shows that the vast majority of the students were very young.

Table 3 also shows that 53.9% of the students were second year and 46.1% of the students were third year. This indicates that there are a proportional number of students from the two batches with slight difference. That means the number of students from second year is greater than that of third year students.

4.2. Analysis of the Data

4.2.1. The Effectiveness of Teachers' Teaching Practices

This part deals with the discussion of the data gathered from respondents on the effectiveness of teachers' day-to-day teaching practice. The effectiveness of teachers' day-to-day teaching practice was presented to respondents through questionnaires that they were required to rate the level of teachers' accomplishment on the basis of a five point Likert scale. These five point scales range from strongly agree (= 5) to strongly disagree (= 1). Mean scores, standard deviations and t-test results were calculated from the responses. Within the five point ranges, three trisecting scores were used to make the analysis clear. These scores were 2.49, 3.49 and 4.49. Thus, teachers' performances on their teaching practices based on the responses of the respondents with a mean value from 1.00 to 2.49 were low, from 2.5 to 3.49 were moderate, from 3.50 to 4.49 were high, and from 4.50 to 5.00 were very high. Open-ended questions were also analyzed to strengthen the close-ended ones separately. Besides, responses from the interview were summarized to validate the findings during the process of presentation and analysis of all data in each close-ended item as necessary.

Table 4: Teachers' and Students' Mean Scores on the Effectiveness of Teachers' Teaching Practices

	Item	Respondent Group	N	Mean	Std. Deviation	Mean Difference	t-value	p-value
1.	Teachers know each of their students by their names	Teachers	110	3.10	1.03	0.09	0.70	0.49
		Students	440	3.01	1.23			
2.	Teachers arrange consultation hours for their students	Teachers	110	3.85	1.20	0.27	1.97	0.05
		Students	440	3.58	1.30			
3.	Teachers use examples, illustrations and demonstrations to explain and clarify lessons	Teachers	110	4.19	0.91	0.35	2.97	0.00
		Students	440	3.84	1.15			
4.	Teachers inform their students the lesson objectives	Teachers	110	4.25	0.99	0.17	1.41	0.16
		Students	440	4.09	1.13			
5.	Teachers give a summary at the end of each lesson	Teachers	110	4.06	1.10	0.80	5.72	0.00
		Students	440	3.26	1.36			
6.	Teachers use attention gaining activities, ideas, concepts and devices while teaching their students	Teachers	110	4.12	0.88	0.39	3.23	0.00
		Students	440	3.73	1.18			
	Average	Teachers	110	3.93	1.09	0.34	2.59	0.01
		Students	440	3.59	1.28			

Denotes significant at α 0.05 level, t-critical value (1.96) df= 548

It can be seen from Table 4 item 1 that, teachers and students were asked to give their agreement or disagreement regarding teachers' knowledge of each of their students by names. The mean score of teacher respondents is 3.10 and that of the student respondents is 3.01, with mean difference of 0.09. The t-test result with p-value 0.49 > 0.05 indicates that there is no statistically significant difference between the two groups of respondents towards the item. Similarly, the t-value (0.70) which is less than the t-critical (1.96) proves that the two groups of respondents do not significantly differ in their agreement on the

item. This shows that teachers' knowledge of each of their students by their names was moderate.

Regarding item 2 in the same Table, teachers' arrangement of consultation hours to their students was also rated by each group of the respondents. The mean scores of the teacher and student respondents were 3.85 and 3.58 respectively, with mean difference of 0.27. The t-test result with p-value 0.05 shows that there is no statistically significant difference between the two groups of respondents towards the item. Similarly, the t-value (1.97) which is greater than the t-critical value (1.96) proves that the two groups of respondents do not significantly differ in their agreement on the item. This, therefore, shows that the arrangement of consultation hours by teachers to their students was high. In the same way, the data obtained from interviews shows that teachers arrange consultation hours to their students.

As to the use of examples, illustrations and demonstrations by teachers to explain and clarify the lessons or contents they teach, Table 4 item 3 depicts that the teachers' and students' mean scores were 4.19 and 3.84 respectively, with mean difference of 0.35. The t-test result with p-value of $0.00 < 0.05$ proves that there is statistically significant difference between the two groups of respondents towards the item. The t-value (2.97) which is greater than the t-critical value (1.96) shows that the two groups of respondents significantly differ in their agreement on the item. This shows that teachers' use of examples, illustrations and demonstrations to explain and clarify the lessons or contents they teach was high even though the level of agreement by the teacher respondents was greater than that of the student respondents.

Similarly, the data obtained from faculty deans reveals that teachers use examples, illustrations and demonstrations to explain and clarify the lesson or contents they teach. Regarding this, Gurney (2007:1) state that effective teacher is the one who engages with the students in the class by using examples and demonstrations in a way that highlights mutual respect and an acknowledgement of the learning process that is taking place.

With regard to item 4 in the same Table above, the mean scores of teachers and students were 4.25 and 4.09, with mean difference of 0.17. The t-test result with p-value of $0.16 >$

0.05 indicates that there is no statistically significant difference between the responses of the two groups of respondents. The calculated t-value (1.41) which is less than the t-critical value (1.96) proves that the two groups of respondents do not significantly differ in their agreement on the item. That is both groups agree that the teachers mostly communicate the lesson objectives to their students. This, therefore, reveals that teachers' informing of the lesson objectives to their students was high.

Similarly, the data collected from the faculty deans through interview showed that as they arrange meeting time to discuss about the effectiveness of the teaching learning with the students, teachers inform their students the lesson objectives they are expected to achieve at the end of the lesson for better learning.

It can be seen from Table 4 item 5 that, teachers and students were asked to give their agreement or disagreement regarding teachers' giving of summary at the end of each lesson. The mean scores of the teacher respondents and student respondents were 4.06 and 3.26 respectively, with mean difference of 0.80. The t-test result with p-value of $0.00 < 0.05$ shows that there is statistically significant difference between the responses of the two groups of respondents towards the item. The calculated t-value (5.72) which is greater than the t-critical value (1.96) also proves that the two groups of respondents significantly differ in their agreement on the item. This indicates that teachers have higher level of agreement and students have moderate level of agreement to the item. The data obtained from the interview shows that teachers give summary at the end of each lesson.

With regard to item 6 in the same Table, the mean scores of teacher and student respondents were 4.12 and 3.73, with mean difference of 0.39. The t-test result with p-value of $0.00 < 0.05$ indicates that there is statistically significant difference between the two groups of respondents towards the item. The t-value (3.23) which is greater than the t-critical value (1.96) also proves that the two groups of respondents significantly differ in their agreement on the item. This shows that teachers' use of attention gaining activities, ideas, concepts, and devices was high even though teachers have higher level of agreement to the item than the students.

An overall effectiveness of teachers' teaching practices computed by aggregating the responses of the six effectiveness items resulted in average mean scores of 3.93 and 3.59 by teachers and students respectively with mean difference of 0.34. This indicates that, there is statistically significant difference between the two groups of respondents (p-value of 0.01 < 0.05) in the computed average agreement for the overall effectiveness of teachers' teaching practices. The t-value (2.59) which is greater than the t-critical value (1.96) proves that the two groups of respondents significantly differ in their agreement on the item. This indicates that both groups of respondents tend to have high level of agreement to the overall effectiveness of teachers' teaching practices even though teacher respondents have higher level agreement to the item.

Teachers and students were asked to give their responses whether teachers use rewards and reinforcers (such as verbal praise, extra credit, etc) to motivate their students who are performing very well or not. Eight point two percent of the teacher respondents responded that they did not use rewards and reinforcers to motivate their students who are performing very well whereas 91.8% of the teacher respondents replied that they use rewards like verbal praises and extra marks or bonuses to motivate their students. One of the teacher respondents replied:

> *I usually use words like 'excellent', 'keep it up', 'exactly', 'very good', 'good', 'you are right', 'definitely', 'absolutely', etc to either approve or express appreciation or motivation. I tell them success stories. I also give pen, books, exercise books, bonus marks, etc to my students who are performing well.*

Nineteen point five percent of the student respondents replied that teachers did not use rewards and reinforcers in motivating their students whereas the rest of the respondents (80.5%) said that they used rewards and reinforcers particularly verbal praises in motivating their students' performances. One of the respondents replied:

Therefore, I arrange appropriate time for teaching my students in the morning either before 12:00 pm or at the evening after 4:00 pm. I also arrange make-up and tutorial classes to help them learn. I did not teach my students when there is no light for ventilation service.

Some student respondents (33.2%) replied that teachers did not create situations in which appropriate learning was taking place. One of the student respondents said that "I did not see a teacher who creates this kind of situation for our learning." In contrast to this, 66.8% of them replied that teachers were creating situations in which appropriate learning was taking place by establishing good rapport, using method of teaching appropriate to the content, providing the necessary materials, adjusting the class time and avoiding disturbances. One of the student respondents said:

Most of our teachers make the teaching-learning process favorable or conducive by changing the time which is not suitable for appropriate learning to take place. As it is known, the temperature is too hot particularly between 12:00 pm to 3:30 pm which is very challenging to our learning. As a result of this, our teachers shift the time either to the morning or to the evening when the temperature becomes relatively moderate. If there is no light they arrange a make-up class for ventilation purposes. If the situation is not comfortable or there is disturbance around, our teachers avoid the disturbances or find other classes to make the learning situation conducive and interesting.

This, therefore, indicates that teachers were creating situations in which appropriate learning was taking place. That is, they were doing their best as much as possible in making the teaching learning process conducive, effective, efficient, and attractive to their students.

Teachers and students were also asked to give their responses whether teachers ask their students to give constructive feedback on each others' work or not. Eighty-nine point one percent of the teacher respondents replied that they did not ask their students to give constructive feedback on each others' work whereas 10.9% of them replied that they

"sometimes/as needed" allow their students to give constructive feedback on each others' work. One of the teacher respondents said that:

> *For me feedback is the breakfast of champions. This is my principle and I sometimes encourage my students to give valuable feedback on other students' work orally in the class. When some issues arise from one student, I give a chance of answering to other students. Then, I sometimes let other students comment on those answers given by other students.*

Eighty-two point three percent of the student respondents said that teachers did not ask their students to give constructive feedback on each other's work. One of the student respondents replied that "I didn't see such like activity up to now instead they themselves give feedback or comments on the works of students rather than giving the opportunity to other students to give feedback on other students' work." In contrast to this, 17.7% of them reported that teachers sometimes ask or allow their students to give constructive feedback on each others' work.

Therefore, one can understand that teachers did not ask or allow their students to give constructive feedback on each other's work or performances especially in the classroom when questions arise.

4.2.2. The Considerations in Choosing Teaching Methods

This part deals with the discussion of the data gathered from respondents on the considerations in choosing teaching methods. The considerations in choosing teaching methods were presented to respondents through questionnaires that they were required to rate the level of accomplishment of the teachers on the basis of a five point Likert scale. These five point scales range from strongly agree (= 5) to strongly disagree (= 1). Mean scores, standard deviations and t-test results were calculated from the responses. Within the five point ranges, three trisecting scores were used to make the analysis clear. These scores were 2.49, 3.49 and 4.49. Thus, teachers' performances on tasks with a mean value from 1.00 to 2.49 were low, from 2.5 to 3.49 were moderate, from 3.50 to 4.49 were high, and from 4.50 to 5.00 were very high. Open-ended questions were also analyzed to strengthen the close-ended ones separately. Besides, responses from the interview were used to

validate the findings during the process of presentation and analysis of all data in each close-ended item as necessary.

Table 5: Teachers' and Students' Mean Scores on the Considerations in Choosing Methods of Teaching

	Item	Respondent Group	N	Mean	Std. Deviation	Mean Difference	t-value	p-value
1.	Teachers consider the age and maturity level of their students	Teachers	110	3.66	1.05	0.83	6.00	0.00
		Students	440	2.83	1.36			
2.	Teachers recognize students' background knowledge and existing skills	Teachers	110	4.02	0.94	0.53	4.15	0.00
		Students	440	3.49	1.26			
3.	Teachers consider content of the subject matter or the instruction	Teachers	110	4.63	0.52	0.59	5.89	0.00
		Students	440	4.04	1.02			
4.	Teachers consider learning objectives or outcomes to be achieved	Teachers	110	4.71	0.50	0.78	7.19	0.00
		Students	440	3.93	1.11			
	Average	Teachers	110	4.25	0.90	0.68	5.27	0.00
		Students	440	3.57	1.29			

Denotes significant at α 0.05 level, t-critical value (1.96) df= 548

It can be seen from Table 5 item 1 that teachers and students were asked to rate teachers' consideration of age and maturity level of students. The mean scores of the teacher and student respondents were 3.66 and 2.83 respectively, with mean difference of 0.83. The t-test result with p-value of 0.00 < 0.05 indicates that there is statistically significant difference between the two groups of respondents towards the item. The t-value (6.00) which is greater than the t-critical value (1.96) proves that the two groups of respondents significantly differ in their agreement on the item. This shows that teachers have higher level of agreement to teachers' consideration of the age and maturity level of their students than the students who support moderate consideration.

Similar to the student respondents, the data obtained from the interviews made with the faculty deans revealed that as they discuss with the students and teachers themselves on a meeting about the teaching learning process, teachers consider the age and maturity level of their students before choosing teaching methods.

The mean scores of the teacher and student respondents for the teachers' consideration of students' background knowledge and existing skills were 4.02 and 3.49 respectively with mean difference of 0.53. The t-test result with p-value of $0.00 < 0.05$ indicates that there is statistically significant difference between both groups of respondents on the item. The t-value (4.15) which is greater than the t-critical value (1.96) proves that the two groups of respondents significantly differ in their agreement on the item. This indicates that teachers have higher level of agreement to the item than the students. That is, students' response indicates that teachers' consideration of the students' background knowledge and existing skills was moderate.

Similar to the teacher respondents, the data obtained from the interviews made with the faculty deans revealed that, as deans make a discussion with teachers, teachers consider their students' background knowledge and existing skills before choosing teaching methods.

The mean scores of the teacher and student respondents for the teachers' consideration of the content of the subject matter or the instruction (item 3) were 4.63 and 4.04 respectively with a mean difference of 0.59. The t-test result with p of $0.00 < 0.05$ shows that there is statistically significant difference between the responses of the two groups of respondents. The t-value (5.89) which is greater than the t-critical value (1.96) proves that the two groups of respondents significantly differ in their agreement on the item. This indicates that teachers' level of agreement to the item was very high and that of the students was high.

Similarly, the data obtained from the interviews made with the faculty deans showed that, as they make a discussion with both teachers and students, teachers consider the content of the subject matter or the instruction before choosing teaching methods.

Teachers and students were asked to rate on the teachers' consideration of the learning objectives or outcomes to be achieved (item 4). The mean scores of the teacher and student

respondents were 4.71 and 3.93 respectively with mean difference of 0.78. The t-test result with p of 0.00 < 0.05 shows that there is statistically significant difference between the responses of the two groups of respondents. The t-value (7.19) which is greater than the t-critical value (1.96) proves that the two groups of respondents significantly differ in their agreement on the item. This reveals that teacher respondents' have a very high level agreement on teachers' consideration of learning objectives or outcomes to be achieved compared to the student respondents' average agreement which is near to the high level of agreement.

Similarly, the data obtained from the interviews made with the faculty deans showed that teachers consider the learning objectives or outcomes to be achieved before choosing teaching methods. The evidence is deans make discussion with teachers on a meeting about students' learning.

An overall consideration in choosing methods of teaching was computed by aggregating the responses of the six considerations in choosing methods of teaching items resulted in average mean scores of 4.25 and 3.57 by teachers and students respectively, with a mean difference of 0.68. This shows that there is statistically significant difference between the responses of the two groups of respondents (p-value of 0.00 < 0.05). The t-value (5.27) which is greater than the t-critical value (1.96) proves that the two groups of respondents significantly differ in their agreement on the items. These results indicate that teachers have higher level of agreement to the items than the students. Students, if not as to the level of their teachers' agreement, do have above moderate level of agreement except the low level agreement (2.83) given to item 1 that their teachers consider the age and maturity level of their students.

Teachers were asked whether they were considering their teaching characteristics (such as their knowledge, skills, experiences, etc) before choosing teaching methods or not. Fourteen point five percent of teacher respondents replied that they did not consider their teaching characteristics such as their knowledge, skills, experiences, competencies, etc before choosing teaching methods. In contrast to this, 85.5% of them responded that teachers consider their teaching characteristics such as their knowledge, skills, experiences, competencies, etc before choosing teaching methods. One of the teacher respondents said:

Choosing teaching method depends on the experience, skill, competence, and knowledge of the teacher. I used to ask myself the following questions before embarking on an actual lesson delivery. How detail is my knowledge on this topic? Am I well read, skillful or experienced on this issues and tasks? How my previous teachers taught me?

This, therefore, indicates that teachers were considering their teaching characteristics such as their knowledge, skills, experiences, competencies, etc before choosing teaching methods that they are going to use to teach their students.

Teachers were also asked whether they were considering the time, space/class size, facility, and resources before choosing teaching methods or not. Twenty-five point five percent of the teacher respondents said that teachers did not consider the time, space/class size, facility, and resources before choosing teaching methods. One of the teacher respondents replied:

I do not consider these things at all. The reason behind this is that there are no adequate classes, facilities and resources. In this environment it is unthinkable, for me, to consider about these issues. Therefore, I merely teach my students by not considering these considerations.

Whereas 74.5% of the respondents replied that teachers were considering the time, space/class size, facilities and resources before choosing teaching methods to be employed. One of the teacher respondents said:

I consider these things as much as possible. For instance, I mostly prefer to use lecture method if there are no facilities of demonstration, if the time is too short, and if the class size is large. But I use other interactive methods (discussion method, for example), if class size is small and if there is adequate time for it. I also consider the available resources for teaching my students.

From this, one can understand that teachers were considering the time, space/class size, facilities and resources before choosing the teaching method they use or employ to teach their students even though few of them did not consider them.

4.2.3. Teachers' Methods of Teaching

This part deals with the discussion of the data gathered from respondents on the teachers' methods of teaching. The teachers' methods of teaching were presented to respondents through questionnaires that they were required to rate the level of accomplishment of the teachers on the basis of a five point Likert scale. These five point scales range from strongly agree (= 5) to strongly disagree (= 1). Mean scores, standard deviations and t-test results were calculated from the responses. Within the five point ranges, three trisecting scores were taken to make the analysis clear. These scores were 2.49, 3.49 and 4.49. Thus, teachers' performances on tasks with a mean value from 1.00 to 2.49 were low, from 2.5 to 3.49 were moderate, from 3.50 to 4.49 were high, and from 4.50 to 5.00 were very high. Open-ended questions were also analyzed to strengthen the close-ended ones separately. Besides, responses from the interview were summarized to validate the findings during the process of presentation and analysis of all data in each close-ended item as necessary.

To assess teachers' method of teaching both respondent groups were asked to give their ratings regarding eleven (11) methods of teaching items as presented in table 6 below. In this table, the average agreement level given by the two respondent groups regarding each item is computed and presented with statistical t-test results.

Table 6: Teachers' and Students' Mean Scores on the Teachers' Methods of Teaching

	Item	Respondent Group	N	Mean	Std. Deviation	Mean Difference	t-value	p-value
1.	Teachers teach large number of students at a time	Teachers	110	3.68	1.26			
		Students	440	3.39	1.35	0.29	2.06	0.04
2.	Teachers create learners' interest, enthusiasm and appreciation	Teachers	110	4.04	0.79			
		Students	440	3.72	1.18	0.32	2.69	0.01
3.	Teachers encourage students' participation/involvement and success in their learning	Teachers	110	4.58	0.68			
		Students	440	4.03	1.03	0.56	5.38	0.00
4.	Teachers provide students with demonstrations to make them good observers	Teachers	110	3.76	1.08			
		Students	440	3.84	1.13	-0.07	-0.61	0.54
5.	Teachers enhance students' critical thinking and skills of scientific investigation	Teachers	110	4.05	0.81			
		Students	440	4.05	1.09	0.00	0.00	1.00
6.	Teachers support/help their students to learn how to discover and organize things	Teachers	110	4.18	0.79			
		Students	440	3.71	1.23	0.47	3.82	0.00
7.	Teachers use textbooks, handouts & other printed materials to teach their students	Teachers	110	4.26	0.75			
		Students	440	4.00	1.19	0.27	2.25	0.03
8.	Teachers use audiotapes, videotapes, slides, photographs, models, practical kits & tools in their classroom	Teachers	110	2.27	1.19			
		Students	440	2.08	1.33	0.19	1.37	0.17
9.	Teachers use multimedia such as text, graphics, motion, sound, images, animations & digital video while teaching	Teachers	110	2.29	1.21			
		Students	440	2.05	1.37	0.25	1.72	0.09
10.	Teachers give individual assignments and projects to their students	Teachers	110	4.33	0.80			
		Students	440	4.04	1.12	0.29	2.57	0.01
11.	Teachers encourage their students to develop group learning skills (discussion and interpersonal skills)	Teachers	110	4.28	0.80			
		Students	440	3.95	1.16	0.34	2.87	0.00
	Average	Teachers	110	3.79	1.21			
		Students	440	3.53	1.40	0.26	1.81	0.07

Denotes significant at α 0.05 level, t-critical value (1.96) df= 548

From the data in Table 6 item1, the mean scores of teacher and student respondents were 3.68 and 3.39, with mean difference of 0.29. The t-test result with p-value of 0.04 < 0.05 indicates that the two groups of respondents significantly differ in their average agreement towards the item. In the same way, the calculated t-value (2.06) which is greater than the t-critical value (1.96) confirms that there is statistically significant difference between the responses of the two groups of respondents. This shows that teachers' teaching of large number of students at a time was high to teacher respondents and was moderate to student respondents. Similarly, the data obtained from interviews made with faculty deans revealed that teachers teach large number of students at a time.

As it is indicated on item 2 in Table 6, the computed mean scores of teachers and students on teachers' way of teaching creates learners' interest, enthusiasm and appreciation were 4.04 and 3.72 respectively, with mean difference of 0.32. The t-test result with p-value of 0.01 < 0.05 indicates that there is statistically significant difference between the responses of the two groups of respondents towards the item. In the same way, the calculated t-value (2.69) which is greater than the t-critical value (1.96) confirms that there is statistically significant difference between the responses of the two groups of respondents. This indicates, even though the responses of both groups of respondents was high teachers' level of agreement to the item was higher than that of the students.

Similarly, the data obtained from the interviews made with the faculty deans reveals that teachers were creating their students' interest, enthusiasm and appreciation for the betterment of their students' learning.

As indicated in Table 6 item 3, the respondents' agreement or disagreement to the extent to which teachers encourage students' participation or involvement and success in their learning was considered. Hence, the mean scores of the teacher and student respondents were 4.58 and 4.03 respectively, with mean difference of 0.56. The t-test result with p-value of 0.00 < 0.05 indicates that the two groups of respondents do significantly vary in their average agreement towards the item. In the same way, the calculated t-value (5.38) which is greater than the t-critical value (1.96) confirms that there is statistically significant difference between the responses of the two groups of respondents. This reveals that teachers' encouragement of students' participation or involvement and success in their

learning was very high to teacher respondents and was high to student respondents. Supporting this, Biggs (1996) and Kember (1996) have stated that students will learn more when they are actively engaged in the teaching learning process. Similar to this, Blake (2006:3) also states that students' active involvement and interaction facilitate their learning.

Regarding item 4 in Table 6, the mean scores of both the teachers and students were 3.76 and 3.84 respectively, with mean difference of 0.07. The t-test result with p-value of 0.54 > 0.05 indicates that both groups of respondents do not significantly differ in their average agreement towards the teachers' provision of the students with demonstrations which make them good observers. Similarly, the calculated t-value (0.61) which is less than the t-critical value (1.96) confirms that there is no statistically significant difference between the responses of the two groups of respondents. This confirms that teachers' provision of the students with demonstrations which make them good observers was high.

In the same Table item 5, the calculated mean scores of the two groups of respondents were 4.05 and 4.05 respectively, with mean difference of 0.00. Therefore, the t-test result with p-value of 1.00 > 0.05 proves that there is no statistically significant difference between the responses of the two groups of respondents. In the same way, the calculated t-value (0.00) which is less than the t-critical value (1.96) confirms that there is no statistically significant difference between the responses of the two groups of respondents. This shows that the teachers' way of teaching in enhancing critical thinking and skills of scientific investigation was equally high which indicate teachers enhance learners' critical thinking and skills of scientific investigation.

With regard to item 6 in Table 6, the mean scores of the teacher and student respondents were 4.18 and 3.71 respectively, with mean difference of 0.47. For the purpose of comparing the average level of agreement of the two groups of respondents, an independent sample t-test was computed. To this end, the t-test result with p-value of 0.00 < 0.05 indicates that there is statistically significant difference between the responses of the two groups of respondents in their average rating of the item. Similarly, the t-value (3.82) is greater than the t-critical value (1.96) implying that there is statistically significant difference in perception of rating this task between the teachers and the students. This

shows that teachers' support or help of their students to learn how to discover and organize things was high even though the degree of agreement by the teachers is higher than that of the students.

As it was depicted in Table 6 item 7, the mean scores of the two groups of respondents were 4.26 and 4.00 respectively, with mean difference of 0.27. The t-test result with p-value of $0.03 < 0.05$ shows that there is statistically significant difference between the two groups of respondents in their ratings towards the item. The t-value (2.25) which is greater than the t-critical value (1.96) similarly proves that the respondents do have a significant difference in perception of rating the task. This indicates that teachers' use of textbooks, handouts and other printed materials to teach their students was high even though the degree of agreement by the teachers is higher than that of the students.

Concerning item 8 in Table 6, the mean scores of the teachers and the students were 2.27 and 2.08 respectively, with mean difference of 0.19. The computed t-test result with p-value of $0.17 > 0.05$ shows that the teacher respondents and student respondents do not significantly differ in their average ratings. This can also be proved by the t-value (1.37) which is less than the t- critical value (1.96). This clearly showed that the teachers' use of audiotapes, videotapes, slide sequences, photographs, models, practical kits and tools in their classroom was low.

Similarly, the data obtained from the interviews made with the faculty deans showed that teachers did not use audiotapes, videotapes, slide sequences, photographs, models, practical kits, and tools while teaching their students.

Similarly, as depicted in Table 6 item 9, the calculated mean value of the teachers and the students were 2.29 and 2.05, with mean difference of 0.25. The t-test result with p-value of $0.09 > 0.05$ proves that there is no statistically significant difference between the two groups of respondents in their ratings towards the item. The t-value (1.72) which is less than the t- critical value (1.96) similarly proves that there is no statistically significant difference between the responses of the two groups of respondents. This revealed that the teachers' use of multimedia such as text, graphics, motion, sound, images, animations, and digital video while teaching their students was low.

Similarly, the data obtained from the interviews made with the faculty deans showed that teachers did not use multimedia such as text, graphics, motion, sound, images, animations, etc for the teaching activities.

Table 6 item 10 depicts that the mean scores of both groups of respondents were 4.33 and 4.04, with mean difference of 0.29. When we compare the scores of the two groups of respondents with a t-test p-value of $0.01 < 0.05$, it can be concluded that there is statistically significant difference between the responses of the two groups of respondents. In the same way, the t-test value (2.57) is greater than the t-critical value (1.96) proving that both groups of respondents do significantly differ in their average ratings. This revealed that teachers' provision or giving of individual assignments and projects to their students was high even though the teacher respondents have relatively higher level of agreement to the item than the student respondents. In the same way, the data obtained from the interviews made with the faculty deans revealed that teachers were giving individual assignments and projects to their students.

As it is indicated in table 6 item 11 the mean scores of the teachers 4.28 and the mean scores of the students 3.95, with a mean difference of 0.37, reveals that teachers' encouragement of their students to develop group learning skills such as discussion and interpersonal skills was high. This indicates that, even though both groups of respondents have high level of agreement to the item teacher respondents have relatively higher level of agreement to the item than the student respondents. The t-test result with p-value of $0.00 < 0.05$ indicates that the two groups of respondents do significantly differ in their average ratings towards the item. The t-value (2.87) which is greater than the t-critical value (1.96) also proves that there is statistically significant difference between the responses of the two groups of respondents.

An overall teachers' methods of teaching was computed by aggregating the responses of the eleven teachers' methods of teaching items resulted with an average mean scores of 3.79 and 3.53 by the teacher and student respondents respectively, with mean difference of 0.26. The two groups of respondents have no statistically significant difference (p-value of $0.07 > 0.05$) in the computed average agreement for the teachers' methods of teaching items. Both groups of respondents tend to have high level agreement to all teachers'

methods of teaching items with the exception of item 8 in which the mean scores of teachers and students were 2.27 and 2.08, and item 9 in which the mean scores of teachers and students were 2.29 and 2.05.

Rank Analysis

Teachers and students presented to rank in order seven teaching methods from 1st to 7th for the most to the least employed method of teaching by teachers. The table below presents the number of respondents rated each method of teaching in rank from the most employed to the least employed. The weighted average rank by each group of respondent is computed for each method of teaching. The weighted average rank is then used to generate the RANK for each method by each of the respondent groups.

Table 7: The rank of seven methods of teaching as per their employment in the classroom

Teaching Methods	Respondents	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Rank 7	Rank Avg.	RANK
Lecture	Teachers	90	11	2	0	1	4	2	1.46	1
	Students	314	38	25	15	16	6	26	1.87	1
Demonstration	Teachers	5	15	21	29	16	20	5	4.05	3
	Students	23	46	47	190	46	40	48	4.14	4
Inquiry	Teachers	0	9	16	17	24	24	20	4.89	5
	Students	5	27	37	62	91	151	67	5.11	7
Discovery	Teachers	0	4	12	13	24	35	22	5.27	6
	Students	4	33	37	36	131	133	66	5.09	6
Laboratory	Teachers	2	5	7	13	20	15	48	5.55	7
	Students	42	30	39	42	82	51	154	4.96	5
Individualized	Teachers	4	7	36	26	15	10	12	4.08	4
	Students	26	82	188	57	41	30	16	3.36	3
Discussion	Teachers	10	61	15	12	9	1	2	2.64	2
	Students	40	176	84	47	41	29	23	3.12	2

Lecture method was found to be ranked as the 1st mostly employed method of teaching by both teacher and student respondents. This method was rated as rank 1 by 90 of the teacher respondents and 314 of the student respondents. Teachers and students also have similar rank to the discussion method as the 2nd most employed teaching method in favor of the majority of teachers (61) and the majority of students (176). Supporting this, McKimm and Jollie (2007) note that lecture method is the most widely used teaching method in Higher Education Institutions. In the same way, Sajjad (2004) state lecture method is the most commonly used teaching method by many teachers of higher education.

For the 3rd most employed teaching method, teachers' rating identifies demonstration while students' ranking indentifies individualized method. Teachers' and students' ranking for the 3rd and 4th place was found to be interchangeable. That is, teacher respondents ranked demonstration method as the 3rd and individualized method as the 4th method employed whereas student respondents ranked individualized method as the 3rd and demonstration as the 4th employed method of teaching.

Inquiry method is placed as the 5th by teachers whereas it is 7th according to the student respondents ranking. Laboratory method is ranked 7th by the teacher respondents and the 5th by the student respondents. However, both respondent groups placed discovery method as the 6th employed method of teaching.

In order to see the congruence and consistence of the two groups of respondents' ranking, the rank correlation was computed and tested for its significance. The resulting rank correlation, $r = 0.821$, is a significant correlation with corresponding p-value of $0.023 < 0.05$. This result shows the similarity, if not identical, of the ranks given to each method of teaching by teachers and students. Therefore, it can be inferred that there is high correlation between the rankings of the two groups of respondents.

Similarly, the data obtained from the interviews made with the faculty deans shows that lecture method is the most commonly employed method of teaching by teachers at Samara University. Next to the lecture method, discussion and individualized methods are also most commonly employed by teachers at the University. In addition, demonstration,

inquiry, discovery and laboratory methods of teaching are sometimes employed by teachers.

Teachers and students were asked how teachers use the aforementioned methods of teaching to address the different needs of students. Thirty point nine percent of the teacher respondents replied teachers did not know whether the teaching methods they employ or use addresses the needs of their students or not whereas 69.1% of them responded that teachers use the aforementioned methods of teaching to address the different needs of their students depending on the situation, the availability of teaching materials and resources, the nature of the course (the subject matter,) the topic to be delivered, objectives of the lesson, daily lessons, and the number of students within a class. One of the teacher respondents said:

> *I use different teaching methods as frequently as the subject matter requires in addressing the needs of my students. For instance, I give group projects, assignments and presentations whenever there is a need to do that. I use debate whenever the content is a debating issue. I also use demonstration method whenever the content is more of practical. If it is laboratory class I use laboratory method. I also use different teaching methods by identifying my students' background knowledge, prior experience, communication skills, their number within a class, and even environmental conditions for classroom arrangement.*

Besides this, 22% of the student respondents responded that teachers did not address their different needs by using different methods of teaching while the rest 80% of them responded that teachers were addressing the different needs of their students as much as possible by using different teaching methods depending on the availability of teaching materials and resources, the nature of the course/content, the topic to be delivered, objectives of the lesson, and the number of students within a class. One of the student respondents said:

It depends on the content of the subject matter and the resources for teaching. For example, if the content is more of theoretical aspect the teacher uses the lecture method. If the content is more of practical aspect the teacher uses demonstration or laboratory methods. If the content needs students' collaboration the teacher uses discussion, debate and other methods relevant to the content. This could be done by knowing the understanding level of students and their prior experiences or backgrounds.

Therefore, this indicates that teachers were employing different teaching methods to address the different needs of their students depending on the availability of teaching materials and resources, the nature of the course/content, the topic to be delivered, objectives of the lesson, and the number of students within a class. Supporting this, Firdissa (2005:51) state that effectiveness in learning depends upon a teacher's ability to select and use the appropriate teaching strategy at the appropriate time.

Teachers and students were also asked whether teachers' were encouraging students to interact with each other in the learning activities or not. From the teacher respondents, 7.3% of them responded that teachers did not encourage their students to interact with each other in the learning activities whereas 92.7% of them responded that teachers were encouraging their students to interact with each other in the learning activities by giving group work/project, group discussion activities, group assignments and presentations, raising debating issues, using question and answer.

I encourage my students' interaction with each other by giving group discussion activities, question and answer, group assignments and presentations, debate, group and pair works, etc. For instance, I group students to discuss on a certain issue. I tell them to select a leader from each group. I give time for discussion. Finally, the leaders from each group are required to reflect on what they have discussed with their group members.

With regard to this, 9.8% of the student respondents replied that teachers did not encourage their students to interact with each other in the learning activities. One of the student respondents said that "our teachers did not encourage student interaction with each other

even they did not appreciate it." The rest of the respondents (90.2%) responded that teachers were encouraging their students to interact with each other in the learning activities by using group discussion, projects, assignments, presentations, question and answer, debate, field trip, and worksheets.

Therefore, one can understand from this that teachers were encouraging their students to interact with each other in the learning activities using different mechanisms such as group discussion, question and answer, group projects, group assignments, group presentations, field trips, work sheets, and debate.

4.2.4. Quality Indicators of Student Learning

This part deals with the discussion of the data gathered from respondents on the quality indicators of student learning. The quality indicators of student learning were presented to respondents through questionnaires that they were required to rate the level of accomplishment of the teachers on the basis of a five point Likert scale. These five point scales range from strongly agree (= 5) to strongly disagree (= 1). Mean scores, standard deviations and t-test results were calculated from the responses. Within the five point ranges, three trisecting scores were taken to make the analysis clear. These scores were 2.49, 3.49 and 4.49. Thus, teachers' performances on tasks with a mean value from 1.00 to 2.49 were low, from 2.5 to 3.49 were moderate, from 3.50 to 4.49 were high, and from 4.50 to 5.00 were very high. Open-ended questions were also analyzed to strengthen the close-ended ones separately. Besides, responses from the interview were summarized to validate the findings during the process of presentation and analysis of all data in each close-ended item as necessary.

Table 8: Teachers' and Students' Mean Scores on the Quality Indicators of Student Learning

Item	Respondent Group	N	Mean	Std. Deviation	Mean Difference	t-value	p-value
1. Teachers use various teaching methods to teach students	Teachers	110	3.39	1.07	0.16	1.21	0.23
	Students	440	3.23	1.31			
2. There is good academic staff-to- student ratio	Teachers	110	3.06	1.21	-0.09	-0.67	0.51
	Students	440	3.15	1.29			
3. The curricula are relevant to students' learning	Teachers	110	3.30	1.17	0.00	0.02	0.99
	Students	440	3.30	1.18			
4. Students acquire necessary skills and knowledge as a result of their learning	Teachers	110	3.59	0.93	0.10	0.83	0.41
	Students	440	3.49	1.21			
5. There is a good leadership and management system that facilitate student learning	Teachers	110	2.15	1.16	-0.47	-3.33	0.00
	Students	440	2.61	1.35			
6. Learning is highly integrated with the use of technologies	Teachers	110	1.96	1.30	-0.09	-0.66	0.51
	Students	440	2.05	1.25			
Average	Teachers	110	2.91	1.31	-0.06	-0.44	0.66
	Students	440	2.97	1.36			

Denotes significant at α 0.05 level, t-critical (1.96) df= 548

It can be seen from Table 8 item 1 that, teachers and students were asked to give their agreement or disagreement regarding the teachers' use of various teaching methods to teach their students. The mean scores of the teacher respondents 3.39 and that of the student respondents 3.23, with the resulting mean difference of 0.16, is tested for its significance beyond zero. The test result with t-value= 1.21 and p-value of 0.23 > 0.05 shows that the mean difference is not significantly different from zero. This indicates that, the average agreement levels by teachers and students have no statistically significant difference to one another. That is, teachers' use of various teaching methods to teach students was moderate. Derebssa (undated:1) states that student learning requires the

teachers' use of different methodologies and pedagogies. Similarly, Firdissa (2005:50) posited that since the same method does not work for every student, HEI teachers should be able to use a variety of teaching methods so as to address the individual needs and preferences of the students they teach.

For item 2 in the same Table, the mean scores of teacher and student respondents were 3.06 and 3.15, with mean difference of 0.09. The t-test result with p-value of 0.51 > 0.05 reveals that there is no statistically significant difference between the two groups of respondents towards the presence of academic staff-to-student ratio. The t-value (0.67) which is less than the t-critical value (1.96) also proves that there is no statistically significant difference between the responses of the two groups of respondents. This indicates that the existence of academic staff-to-student ratio was moderate. Similarly, the data obtained from faculty deans revealed that there is no good academic staff-to-student ratio because the ratio of academic staff-to-students was averagely 1:40.

Regarding the curricula's relevance for student learning (item 3), both respondent groups have an equal average agreement to the level with a mean score of 3.30. The t-test result with p-value of 0.99 > 0.05 reveals that there is no statistically significant difference between the two groups of respondents towards the item. The t-value (0.02) which is less than the t-critical value (1.96) also proves that there is no statistically significant difference between the responses of the two groups of respondents. This, therefore, indicates that the relevance of the curricula to students' learning was moderate.

For item 4 in the same Table, the mean scores of teacher and student respondents were 3.59 and 3.49 respectively with mean difference of 0.10. The t-test result with p-value of 0.41 > 0.05 reveals that there is no statistically significant difference between the responses of the two groups of respondents. The t-value (0.83) which is less than the t-critical value (1.96) also proves that there is no statistically significant difference between the responses of the two groups of respondents. This indicates that the acquisition of the necessary skills and knowledge of students as a result of their learning was relatively good.

Regarding item 5 in Table 8, the existence of good leadership and management system that facilitate student learning was also rated by each group of respondents. The mean scores of the teacher respondents and student respondents 2.15 and 2.61 respectively with mean difference of 0.47. Similarly, the t-test result with p-value of $0.00 < 0.05$ shows that there is statistically significant difference between the two groups of respondents towards the item.. The t-value (3.33) which is greater than the t-critical value (1.96) also proves that there is statistically significant difference between the responses of the two groups of respondents. This shows that both respondent groups have low level of agreement towards the item even though teachers have higher level of disagreement to the item. That is, the existence of good leadership and management system that facilitate student learning was low.

Teachers and students tend to disagree to item 6 that learning is highly integrated with the use of technologies. The mean scores of teacher and student respondents were 1.96 and 2.05 respectively with mean difference of 0.09. The t-test result with p-value of $0.51 > 0.05$ confirms lack of statistically significant difference between the responses of the two groups of respondents. The t-value (0.66) which is less than the t-critical value (1.96) also proves that there is no statistically significant difference between the responses of the two groups of respondents. This indicates that the integration of learning with the use technologies was very low.

An overall quality indicator of student learning was computed by aggregating the responses of the six quality indicators of student learning items resulted with an average mean scores of 2.91 and 2.97 by the teacher and student respondents respectively with mean difference of 0.06. The two groups of respondents have no statistically significant difference (p-value of $0.66 > 0.05$) in the computed average agreement for the overall quality indicators of student learning items. Both groups of respondents tend to have moderate level of agreement to the overall quality indicators of student learning items except teachers' response on item 5 with a mean score of 2.15, and teachers' and students' responses on item 6 with mean scores of 1.96 and 2.05 respectively. The t-value (0.44) which is less than the t-critical value (1.96) also proves that there is no statistically significant difference between the responses of the two groups of respondents.

Teachers and students were asked the way teachers were assessing the performances of their students in their learning. Twelve point seven percent of the teacher respondents responded that they were assessing the performances of their students using the summative assessment methods such as mid and final examinations whereas 87.3% of the teacher respondents replied that they were assessing the performances of their students using the formative/continuous assessment methods such as tests, quizzes, group and individual assignments (presentations, term paper and project works), attendance, and participation on day-to-day activities and summative assessment method such as mid exam as needed and final examination most of the time.

Regarding this, 18.9% of the student respondents replied that teachers were assessing the performances of their students using the mid and final examinations most of the time and assignments sometimes. In contrast to this, 81.1% replied that teachers were using both continuous assessment methods (quizzes, tests, group and individual assignments/work, projects, attendance, and participation) and summative assessments methods (mid-term exam sometimes and final examination) to assess the performances of their students.

This, therefore, indicates that teachers were assessing the performances of their students by using continuous assessment methods such as tests, quizzes, assignments (individual and group), project work, attendance and participation. They were also using final examination and mid-term exam sometimes to assess the performances of their students. This idea is similar to the idea found on ICDR (1999) which state that today schools and universities are turning to continuous assessment where by recording of the students' performance in nearly everything s/he does during her/his course are kept. Blake (2006:3) also stated that meaningful assessment is both formative and summative.

The data obtained from the interviews made with the faculty deans about the actual teaching practice shows that even though there are many challenges to quality of student learning, the actual teaching learning process in ensuring quality of student learning was at a medium level. This was the result of teachers' commitment in helping their students to achieve what they are expected to achieve. Some of the challenges to quality of student learning at the University, according to the faculty deans, include lack of adequate classrooms, lack of adequate offices, and lack of adequate educational facilities and

services. Therefore, to solve these challenges teachers were using the available educational facilities and resources wisely, and prepare modules and handouts for their students. The faculty deans were discussing with the higher officials or management bodies to fulfill the necessary educational facilities and resources for student learning, and to arrange situations in which adequate classrooms are constructed for students and offices for teachers.

CHAPTER FIVE

SUMMARIES, CONCLUSIONS AND RECOMMENDATIONS

On the basis of the analysis and interpretation of the data gathered through the instruments (questionnaires and interview), the following summaries of the major findings, conclusions, and implications and recommendations have been made.

5.1. Summary

The main purpose of the study was to assess methods of teaching and their implications for quality of student learning at Samara University. Samara University teachers, students and faculty deans were the target population of the study. The population is composed of 256 teachers, 2579 students, 18 department heads, and 4 faculty deans. As a result, 128 teachers and 516 students were selected from the population by simple random sampling technique. Four faculty deans were included in the study using availability sampling technique. Descriptive survey design was employed as a design of the study.

Questionnaires and interview were employed to collect the data from the sample. Before conducting the actual study, the questionnaires were piloted to check the reliability of the items. Accordingly, Cronbach alpha of item reliability was computed and relevant measures were taken on items which have low reliability. Interview was employed mainly to explore important information on the study from the participants to strengthen the data. Document analysis was conducted to supplement the data obtained through questionnaires and the interview.

Quantitative and qualitative methods were used in analyzing the data obtained through the instruments. In the analyses of the quantitative data, percentages, frequencies, mean scores, standard deviations, independent t-test results, and rank correlation were computed. The average mean scores ranging from 1.00-2.49 represent low, 2.50-3.49, 3.50-4.49 and 4.50-5.00 represent moderate, high and very high respectively. In the analyses of the qualitative data, descriptive statements were used. As a result, the major findings of the study are discussed hereunder.

5.1.1. Major Findings

The following are the major findings of the study.

The Effectiveness of Teachers' Teaching Practices

With regard to the effectiveness of teachers' teaching practices, the teacher and student respondents with their average mean values 3.93 and 3.59 respectively showed their agreement that teachers' teaching practices were effective. Similarly, the data revealed that there was statistically significant difference between the two groups of respondents with t-value (2.59) which is greater than the t-critical value (1.96) at $\alpha = 0.05$.

Regarding the teachers' use of rewards and reinforcers, 91.8% of the teacher respondents replied that teachers were using rewards like verbal praises and extra marks or bonuses to motivate their students and 80.5% of the student respondents indicated that teachers were using rewards and reinforcers particularly verbal praises in motivating their students' performances.

Concerning teachers' creating of appropriate learning situations, 86.4% of the teacher respondents replied that teachers were creating situations in which appropriate learning is taking place by maintaining good relationship with the students; respecting, helping and guiding them in their learning; arranging appropriate time for teaching; making objectives clear; employing appropriate methods of teaching; identifying students' background; and giving freedom of asking and participation. Similarly, 66.8% of the student respondents replied that teachers were creating situations in which appropriate learning is taking place by establishing good rapport; using method of teaching appropriate to the content; providing the necessary materials; adjusting the class time; and avoiding disturbances.

With respect to teachers' asking/allowing of their students to give constructive feedback on each others' work, 89.1% of the teacher respondents replied that teachers did not ask their students to give constructive feedback on each others' work and 82.3% of the student respondents said that teachers did not ask their students to give constructive feedback on each other's work.

The Considerations in Choosing Teaching Methods

With regard to the considerations in choosing teaching methods, the teacher and student respondents showed agreement with their average mean values 4.25 and 3.57 respectively that teachers were considering those considerations in choosing methods of teaching before choosing them. The data revealed that there was statistically significant difference between the two groups of respondents with t-value (5.27) which is greater than the t-critical value (1.96) at $\alpha = 0.05$.

Concerning the teachers' consideration of their teaching characteristics (such as their knowledge, competencies, skills, experiences, etc), 85.5% of the teacher respondents replied that teachers were considering their teaching characteristics before choosing teaching methods. Equally, 74.5% of the teacher respondents indicated that teachers were considering the time, space/class size, facilities and resources before choosing teaching methods to be employed.

Teachers' Methods of Teaching

With respect to the teachers' methods of teaching, the teacher and student respondents with their average mean values 3.79 and 3.53 respectively revealed that they had higher level of agreement on teachers' methods of teaching items with the exception of item 8 in which the mean scores of teachers and students were 2.27 and 2.08, and item 9 in which the mean scores of teachers and students were 2.29 and 2.05. The data showed that there was no statistically significant difference between the two groups of respondents with t-value (1.81) which is less than the t-critical value (1.96) at $\alpha = 0.05$.

With regard to the teaching methods employed, lecture method was found to be the most commonly employed method as reported by both groups of the respondents. Discussion method was the second most commonly employed method of teaching as to the respondents. In addition, individualized and demonstration methods were employed as the third and fourth by the student respondents and vice versa by the teacher respondents. Inquiry, discovery and laboratory methods were also employed by teachers sometimes. Therefore, in order to see the congruence and consistency of the two groups of respondents' ranking, the rank correlation was computed and tested for its significance.

The resulting rank correlation, r = 0.821, was a significant correlation with corresponding p-value of 0.023 < 0.05. Similarly, the data obtained from the interview revealed that lecture method was the most commonly employed method of teaching. Discussion, individualized, and demonstration methods were also employed most commonly next to the lecture method.

Furthermore, 69.1% of the teacher respondents replied that teachers were using the aforementioned methods of teaching to address the different needs of their students depending on the availability of teaching materials/resources, the nature of the course/ subject matter, the topic to be delivered, objectives of the lesson, and the number of students within a class. Regarding this, 80% of the student respondents replied that teachers were using those methods of teaching to address the different needs of their students depending on the content of the subject matter and the resources available for teaching.

As to the teachers' encouragement of their students to interact with each other in the learning activities, 92.7% of the teacher respondents replied that teachers were encouraging their students to interact with each other in the learning activities by giving group work/project, group discussion, group assignments and presentations, raising debating issues, using questions and answers. Besides this, 90.2% of the student respondents said that teachers were encouraging their students to interact with each other in the learning activities by using group discussion, projects, assignments, presentations, questions and answers, debate, field trip, and worksheets.

Quality Indicators of Student Learning

Regarding the quality indicators of student learning, the teacher and student respondents revealed with their average mean values 2.91 and 2.97 respectively that both groups of respondents had a moderate level of agreement to the quality indicators of student learning items with the exception of teachers' response on item 5 with a mean score of 2.15, and teachers' and students' responses on item 6 with mean scores of 1.96 and 2.05 respectively. The data confirmed that there was no statistically significant difference between the two groups of respondents with t-value (0.44) which is less than the t-critical value (1.96) at α = 0.05.

Concerning the teachers' assessment of the performances of their students, 87.3% of the teacher respondents replied that teachers were assessing the performances of their students using the formative/continuous assessment methods such as tests, quizzes, group and individual assignments (presentations, term papers and project works), attendance, and participation on day-to-day activities, and summative assessment methods such as mid exam as needed and final examination most of the time. Besides this, 81.1% of the student respondents reported that teachers were using both continuous assessment methods (quizzes, tests, group and individual assignments, projects, attendance, and participation) and summative assessments methods (mid-term exam sometimes and final examination) to assess the performances of their students.

The data obtained from the interview about the actual teaching practice showed that even though there are many challenges to quality of student learning the actual teaching learning process in ensuring quality of student learning was at a medium level because of teachers' commitment in helping their students. Some of the challenges to quality of student learning at the University were lack of adequate classrooms, lack of adequate offices, and lack of adequate educational facilities and resources. In solving these challenges, teachers were using the available educational facilities and resources wisely, and prepare modules and handouts for their students. The faculty deans were discussing with the higher officials or management bodies to fulfill the necessary educational facilities and resources for student learning, and to arrange situations in which adequate classrooms are constructed for students and offices for teachers.

5.2. Conclusions

Based on the major findings, the following conclusions were drawn:

- With regard to the teaching effectiveness, teachers were highly arranging consultation hours; and using examples, illustrations and demonstrations to explain and clarify the lessons or contents they teach. Teachers were also highly informing the lesson objectives; giving summary at the end of the lesson; and using attention gaining activities, ideas, concepts, and devices while teaching their students. This shows that teachers were effective in their day-to-day teaching practices.

- Teachers were using rewards and reinforcers particularly verbal praises, and extra credits, marks or bonuses, and learning materials to motivate their students who were performing very well in their learning. This shows that teachers were effective in rewarding and reinforcing the performances of their students.

- Appropriate learning situations were created by teachers. They created the situations by establishing and maintaining good rapport and relationship with their students; respecting, helping and guiding them in their learning; arranging appropriate time for teaching; making objectives clear; employing appropriate methods of teaching; identifying students' background; giving freedom of asking and participation; using methods of teaching appropriate to the content; providing the necessary learning materials; and avoiding disturbances. This indicates that teachers were effective in creating appropriate learning situations to their students. But students were not asked/allowed to give constructive feedback on each others' work by their teachers instead they were receiving feedback about their performances from their teachers.

- Teachers were highly considering the age and maturity level of their students, their students' background knowledge and existing skills, the content of the subject matter or the instruction, and the learning objectives or outcomes to be achieved before choosing teaching methods. They were also considering their teaching characteristics (knowledge, competencies, skills, and experiences) and the time, space/class size, facilities and resources for students learning. This shows that the considerations in choosing methods of teaching were highly considered by teachers as a result the quality of student learning is ensured.

- With respect to the teachers' methods of teaching, teachers' teaching of large number of students at a time; creating learners' interest, enthusiasm and appreciation; and encouraging students' participation or involvement and success in their learning were high. The provision of the students with demonstrations which make them good observers, and teachers' way of teaching in enhancing critical thinking and skills of scientific investigation were also high. Teachers were highly supporting their students to learn how to discover and organize things, and using

textbooks, handouts and other printed materials to teach their students. They were also highly providing or giving individual assignments and projects to their students, and encouraging their students to develop group learning skills such as discussion and interpersonal skills. This indicates that teachers were effective in helping their students to learn and understand the content.

- Teachers' use of mediated materials such as audiotapes, videotapes, slide sequences, photographs, models, practical kits and tools in their classroom, and multimedia such as text, graphics, motion, sound, images, animations, and digital video while teaching their students was low. This shows that the absence of mediated materials and multimedia in teaching reduces the understanding, quality learning and retention capacity of the students.

- With regard to the teaching methods employed, lecture, discussion, individualized and demonstration methods were found to be the most commonly employed methods of teaching as compared to the others (inquiry, discovery and laboratory methods). Teachers were using the aforementioned methods of teaching to address the different needs of their students depending on the availability of teaching materials/resources, the nature of the course and content/subject matter, the topic to be delivered, the objectives of the lesson, and the number of students within a class. This reveals that teachers use different methods of teaching to address the different needs of their students depending on different aspects of the instruction.

- Students were encouraged to interact with each other in the learning activities by their teachers through group work/project, group discussion activities, group assignments and presentations, raising debating issues, using questions and answers, field trip, and worksheets. This confirms that teachers were effective in encouraging their students to interact with each other in their learning.

- With regard to quality indicators of student learning, teachers' uses of various teaching methods in teaching their students, the existence of academic staff-to-student ratio, and the relevance of the curricula to students' learning were moderate. The acquisition of the necessary skills and knowledge of students as a result of their

learning was relatively good. The existence of good leadership and management system that facilitate student learning, and the integration of learning with the use of technologies were very low. This shows that teachers were not highly effective in bringing quality of student learning.

- Students' performances were assessed using formative/continuous assessment methods such as tests, quizzes, group and individual assignments (presentations, term paper and project works), attendance, and participation on day-to-day activities, and summative assessment methods such as mid exam sometimes and final examination. This indicates that students' performances were assessed by both continuous and summative assessment methods.

5.3. Implications and Recommendations

The study shows that teachers were effective in bringing quality of student learning even though there were some areas that were not achieved. Teachers were in a good position in their teaching effectiveness or day-to-day teaching practices which has a positive implication for the quality of student learning. Teachers were also considering the factor before choosing methods of teaching that help them control the instruction and positively ensures the quality of student learning. The study also revealed that the teachers' methods of teaching has a positive implication for quality of student learning as they were employing different teaching methods in teaching students which enhance the quality of student learning even though some other methods were not emphasized. The quality indicators of student learning were moderately emphasized in which its positive implication for quality of student learning was not bold. Therefore, on the basis of the findings and the conclusions drawn, the following recommendations were forwarded.

1. The study revealed that teachers were not asking/allowing their students to give constructive feedback on each others' work instead they personally were giving feedback on the performances of their students. Thus, teachers should allow their students to give constructive feedback on each others' work.

2. Teachers' use of mediated materials such as audiotapes, videotapes, slide sequences, photographs, models, practical kits and tools in their classroom, and multimedia such as text, graphics, motion, sound, images, animations, and digital video while teaching their students was low. Therefore, it is recommended that teachers should use these mediated materials and multimedia while teaching their students for achieving the betterment of student learning.

3. The study revealed that teachers' use of various teaching methods in teaching their students was moderate. Thus, teachers should highly use various/different teaching methods in teaching their students for the fact that there is no a single, reliable, and multi-purpose method of teaching for the betterment of the teaching-learning process and the attainment of the instructional objectives.

4. Academic staff-to-student ratio (i.e. 1:40 averagely) was moderate. Therefore, the management bodies should adjust a mechanism by which the academic staff-to-student ratio becomes proportional to each other. That is teachers have to be recruited to achieve the UNESCO and GTP target of 1:20.

5. The relevance of curricula to the students' learning was moderate. Therefore, the management bodies (president, vice presidents, faculty deans, and department heads) should work hard in which the curricula becomes highly relevant to the students in terms of addressing their needs for employment and life.

6. The existence of good management system that facilitate student learning was very low. Thus, the management bodies of the University should facilitate students' learning by adopting and practicing good system of leadership and management to bring quality to student learning.

7. The integration of learning with the use of technologies was very low. Therefore, the management bodies should fulfill different technologies which in turn help teachers to integrate learning with technologies for better student learning.

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APPENDICES

Appendix A

Addis Ababa University

School of Graduate Studies

Institute of Educational Research

Questionnaire to be filled by teachers

Dear teacher,

I would like to express my heartfelt thanks and appreciation for your time and sincere cooperation to fill this questionnaire. The questionnaire is designed to assess the methods of teaching employed and their implications on quality of student learning at Samara University. The result and success of this study will highly depend on the quality of your response and I hope you will give accurate and honest responses to the items presented. Your response will be **kept confidential and used only** for this academic purpose.

Directions:

- ☞ You are not required to write your name.
- ☞ Put a "√" mark in the space provided in front of each item.
- ☞ The questionnaire has 5 parts. Please try to fill all the items.
- ☞ Please choose the one which you think is the most appropriate response to each question.

Part One: Background Information

1. Faculty:_____ Field of Specialization:_____
2. Sex: Male ☐ Female ☐
3. Age: 21-25 ☐ 26-30 ☐ 31-35 ☐
   36-40 ☐ above 40 ☐
4. Educational level: BA ☐ BSc ☐
   BED ☐ MA ☐
   MSc ☐
5. Teaching experience in year < 2 ☐ 2-5 ☐
   at Samara University:
6. Workload in credit hour per week: < 6 ☐ 6-11 ☐
   12-18 ☐ > 18 ☐

Part Two: Items related to the effectiveness of your teaching practice

Please indicate the extent to which you apply the day-to-day practice of your teaching by putting "√" mark. There are five alternatives and their value is indicated as follows.

1 = Strongly Disagree 2 = Disagree 3 = Undecided 4 = Agree 5 = Strongly Agree

No	Items	1	2	3	4	5
1	I know each of my students by their names.					
2	I have arranged consultation hours for my students.					
3	I use examples, illustrations and demonstrations to explain and clarify the lesson or content I teach.					
4	I inform my students the lesson objectives.					
5	I give a summary at the end of each lesson.					
6	I use attention gaining activities, ideas, concepts, & devises while teaching.					

7. Do you use rewards and reinforcers (verbal praise, extra credit, etc) to motivate your students who are performing very well? If yes, how?

_____
_____
_____
_____

8. Do you create situations in which appropriate learning is taking place? If yes, how?

_____
_____
_____
_____

9. Do you ask your students to give constructive feedback on each other's work? If yes, how often?

_____
_____
_____
_____

Part Three: Items related to considerations in choosing teaching methods

Please indicate the extent to which you apply the considerations in choosing teaching methods in the teaching learning process by putting "√" mark. There are five alternatives and their value is indicated as follows.

1 = Strongly Disagree 2 = Disagree 3 = Undecided 4 = Agree 5 = Strongly Agree

No	Items	1	2	3	4	5
10	I consider the age and maturity level of my students.					
11	I recognize my students' background knowledge and existing skills.					
12	I consider content of the subject-matter or the instruction.					
13	I consider learning objectives or outcomes to be achieved.					

14. Do you consider your teaching characteristics (knowledge, skills, experiences, etc) before choosing teaching methods? If yes, how?

_____

_____

_____

_____

Do you consider the time, space/class size, facility, and resources before choosing teaching methods? If yes, how?

_____

_____

_____

_____

Part Four: Items related to teachers' methods of teaching

Please indicate the extent to which you apply methods of teaching in the teaching learning process by putting "√" mark. There are five alternatives and their value is indicated as follows.

1 = Strongly Disagree 2 = Disagree 3 = Undecided 4 = Agree 5 = Strongly Agree

No	Items	1	2	3	4	5
16	I am teaching large number of students at a time.					
17	My way of teaching creates learners' interest, enthusiasm and appreciation.					
18	I encourage students' participation/involvement and success in their learning.					
19	Students are provided with demonstrations which make them good observers.					
20	My teaching enhances critical thinking and skills of scientific investigation.					
21	I help my students to learn how to discover and organize things.					
22	I use textbooks, handout notes, and other printed materials to teach my students.					
23	I use audiotapes, videotapes, slide sequences, photographs, models, practical kits, tools, and conventional printed materials in my own classroom.					
24	I use multimedia such as text, graphics, motion, sound, images, animations, and digital video while teaching my students.					
25	I give individual assignments and projects to my students.					
26	I encourage my students to develop group learning skills such as discussion and interpersonal skills.					

27. Here are some teaching methods and you are required to order them by writing numbers 1-7 on the space provided in front of them in which 1 represents the method that you employ mostly in your classroom teaching and 7 represents the least employed method.

1. Lecture method _____
2. Demonstration method _____
3. Inquiry method _____
4. Discovery method _____
5. Laboratory Method _____
6. Individualized methods _____
7. Discussion method _____

28. Based on question number 27 above how do you use those methods of teaching to address the different needs of your students?

_____

_____

_____

_____

29. Do you encourage your students to interact with each other in the learning activities? If yes, how?

_____

_____

_____

_____

Part Five: Items related to quality indicators of student learning

Please indicate the extent to which teachers including you emphasize on quality indicators of student learning by putting "√" mark. There are five alternatives and their value is indicated as follows.

1 = Strongly Disagree 2 = Disagree 3 = Undecided 4 = Agree 5 = Strongly Agree

No	Items	1	2	3	4	5
30	Teachers use various teaching methods to teach students.					
31	There is good academic staff/student ratio.					
32	The curricula are relevant to students' learning.					
33	Students acquired necessary skills and knowledge as a result of their learning.					
34	There is a good leadership and management system that facilitate student learning.					
35	Learning is highly integrated with the use of technologies (ICTs, computer, projectors, etc.)					

36. How do you assess the performances of your students in their learning?

_____

_____

_____

_____

Many thanks in advance for your cooperation!

Appendix B

Addis Ababa University

School of Graduate Studies

Institute of Educational Research

Questionnaire to be filled by students

Dear student,

I would like to express my heartfelt thanks and appreciation for your time and sincere cooperation to fill this questionnaire. The questionnaire is designed to assess the methods of teaching employed and their implications on quality of student learning at Samara University. The result and success of this study will highly depend on the quality of your response and I hope you will give accurate and honest responses to the items presented. Your response will be **kept confidential and used only** for this academic purpose.

Directions:

- You are not required to write your name.
- Put a "√" mark in the space provided in front of each item.
- The questionnaire has 5 parts. Please try to fill all the items.
- Please choose the one which you think is the most appropriate response to each question.

Part One: Background Information

1. Faculty:_____
2. Sex: Male ☐ Female ☐
3. Age: 15-20 ☐ 21-25 ☐
   26-30 ☐ 31-35 ☐
   Above 35 ☐
4. Year: Second ☐ Third ☐

Part Two: Items related to the effectiveness of teachers' teaching practice

Please indicate the extent to which teachers who has taught you apply the day-to-day practice of their teaching by putting "√" mark. There are five alternatives and their value is indicated as follows.

1 = Strongly Disagree 2 = Disagree 3 = Undecided 4 = Agree 5 = Strongly Agree

No	Items	1	2	3	4	5
1	Teachers know each of their students by their names.					
2	Teachers arrange consultation hours for their students.					
3	Teachers use examples, illustrations and demonstrations to explain and clarify the lesson or content to their students.					
4	Teachers inform their students the lesson objectives.					
5	Teachers give summary at the end of each lesson.					
6	Teachers use attention gaining activities, ideas, concepts, & devises while teaching their students.					

7. Do teachers use rewards and reinforcers (verbal praise, extra credit, etc) to motivate their students that are performing very well? If yes, how often?

_____
_____
_____
_____

8. Do teachers create situations in which appropriate learning is taking place? If yes, how?

_____
_____
_____
_____

9. Do teachers ask students to give constructive feedback on other students' work? If yes, how?

_____
_____
_____
_____

Part Three: Items related to considerations in choosing teaching methods

Please indicate the extent to which teachers who has taught you emphasize on the considerations in choosing teaching methods in the teaching learning process by putting "√" mark. There are five alternatives and their value is indicated as follows.

1 = Strongly Disagree 2 = Disagree 3 = Undecided 4 = Agree 5 = Strongly Agree

No	Items	1	2	3	4	5
10	Teachers consider the age and maturity level of their students.					
11	Teachers recognize students' background knowledge and existing skills.					
12	Teachers consider content of the subject-matter or the instruction.					
13	Teachers consider learning objectives or outcomes to be achieved.					

Part Four: Items related to teachers' methods of teaching

Please indicate the extent to which teachers who taught you apply methods of teaching in the teaching learning process by putting "√" mark. There are five alternatives and their value is indicated as follows.

1 = Strongly Disagree 2 = Disagree 3 = Undecided 4 = Agree 5 = Strongly Agree

No	Items	1	2	3	4	5
14	Teachers are teaching large number of students at a time.					
15	Teachers generate learners' interest, enthusiasm and appreciation.					
16	Students' participation/involvement & success in their learning is encouraged.					
17	Students are provided with demonstrations which make them good observers.					
18	Teaching enhanced my critical thinking and skills of scientific investigation.					
19	Students are supported to learn how to discover and organize things.					
20	Teachers use textbooks, handout notes and other printed materials in the instructional process.					
21	Teachers use audiotapes, videotapes, slide sequences, photographs, models, practical kits, tools, & conventional printed materials in their own classroom.					
22	Multimedia such as text, graphics, motion, sound, images, animations, and					

	digital video are used by teachers during the time of teaching.					
23	Teachers give individual assignments and projects to their students					
24	Students are encouraged to develop group learning skills such as discussion and interpersonal skills.					

25. Here are some teaching methods and you are required to order them by writing numbers 1-7 on the space provided in front of them in which 1 represents the method that you employ mostly in your classroom teaching and 7 represents the least employed method.
    1. Lecture method _____
    2. Demonstration method _____
    3. Inquiry method _____
    4. Discovery method _____
    5. Laboratory Method _____
    6. Individualized methods _____
    7. Discussion method _____

26. Based on question number 25 above how do your teachers use those methods of teaching to address the different needs of their students?

_____

_____

_____

_____

27. Do your teachers encourage you to interact with each other in the learning activities? If yes, how?

_____

_____

_____

_____

Part Five: Items related to quality indicators of student learning

Please indicate the extent to which your teachers who has taught you emphasize on quality indicators of student learning by putting "√" mark. There are five alternatives and their value is indicated as follows.

1 = Strongly Disagree 2 = Disagree 3 = Undecided 4 = Agree 5 = Strongly Agree

No	Items	1	2	3	4	5
28	Teachers use various teaching methods to teach students.					
29	There is good academic staff/student ratio.					
30	The curricula are relevant to students' learning.					
31	Students acquired necessary skills and knowledge as a result of their learning.					
32	There is a good leadership and management system that facilitate student learning.					
33	Learning is highly integrated with the use of technologies (ICTs, computer, projectors, etc.)					

34. How do teachers assess students' performances in their learning?

_____

_____

_____

_____

Many thanks in advance for your cooperation!

Appendix C

Addis Ababa University

School of Graduate Studies

Institute of Educational Research

Dear Sir/Madam,

Interview guiding questions for faculty deans

The purpose of this interview is to gather information from faculty deans about methods of teaching and their implications on quality of student learning at Samara University.

1. What are the methods of teaching that teachers employ mostly in their classroom teaching at the University?
2. Do teachers make their teaching effective besides the following focus areas? If yes, how?
   - 2.1. Arranging consultation hour for their students
   - 2.2. Using examples, illustrations, and demonstrations to clarify the lesson
   - 2.3. Informing lesson objectives to their students
   - 2.4. Giving a review or summary at the end of each lesson
   - 2.5. Using attention gaining activities, ideas, concepts, and devises in teaching
   - 2.6. Please you can add (if any)
3. Do teachers consider the following points before choosing teaching methods? If yes, how?
   - 3.1. Age and maturity level of students
   - 3.2. Students' background knowledge and existing skills
   - 3.3. Content of the subject-matter
   - 3.4. Learning objectives/outcomes
   - 3.5. Please you can add (if any)

4. How do you reflect on teachers' methods of teaching practice besides the following issues?

   4.1. Generating students' interest, enthusiasm and appreciation

   4.2. Participation or involving students in the teaching learning process

   4.3. Class size

   4.4. Demonstration

   4.5. Critical thinking and skills of scientific investigation (inquiry)

   4.6. Discover and organize things

   4.7. Using audiotapes, videotapes, slide sequences, photographs, models, practical kits, tools, printed materials, etc.

   4.8. Using multimedia (text, graphics, motion, sound, images, animations, etc)

   4.9. Giving individual assignments and projects to encourage independent study

   4.10. Group learning skills (discussion)

   4.11. Please you can add (if any)

5. How do you see the actual practice of the teaching learning process in ensuring quality of student learning at the University?

6. Are there challenges to quality of student learning at the University? If yes, what are those challenges and what solutions can you suggest to improve the teaching learning process?

No	Challenges	Suggest solutions
1		
2		
3		
4		
5		
6		

Many thanks for your cooperation!

Appendix D

Reliability of items in pilot and actual study

Variables	Pilot study (n= 10,10)	Actual study (n= 110,440)
	α	α
Effectiveness of teaching		
Know names of students	.466	.722
Arrange consultation hour	.728	.887
Examples, illustrations and demonstrations	.673	.712
Inform lesson objectives	.415	.698
Give review or summary at the end of the lesson	.417	.696
Use attention gaining activities, ideas, concepts and devises	.631	.734
	.621	**.756**
Considerations in choosing teaching methods		
Age and maturity level of students	.500	.754
Students' background knowledge and existing skills	.738	.832
Content of the subject-matter	.448	.699
Learning outcomes or objectives	.980	.999
	.607	**.878**
Teachers' methods of teaching		
Large number of students at a time	.877	.945
Generate learners' interest, enthusiasm and appreciation	.811	.824
Encourage student participation/involvement	.826	.854
Demonstration	.856	.898
Enhances critical thinking scientific investigation	.790	.861
Discovering and organizing things	.787	.813
Use textbooks, handout notes and other printed materials	.838	.868
Use audiotapes, videotapes, slides, photographs, models, etc.	.796	.841
Use multimedia	.815	.843
Give individual assignments and projects	.785	.856
Encourage group learning skills	.804	.862
	.835	**.864**
Quality indicators of student learning		
Use various teaching methods	.782	.798
Good academic staff/student ratio	.818	.854
Relevant curricula	.791	.821
Students acquired necessary skills and knowledge	.748	.844
Good leadership and management system	.735	.801
Use of technologies	.781	.831
	.808	**.846**