LEARNING PSYCHOLOGICAL CONCEPTS THROUGH LECTURE VERSUS READING MODULE: AN EXPERIMENTAL STUDY

BY

ABIYE HERIPA

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

JUNE 2004

LEARNING PSYCHOLOGICAL CONCEPTS THROUGH LECTURE VERSUS READING MODULE: AN EXPERIMENTAL STUDY

A THESIS PRESENTED TO THE SCHOOL OF GRADUATE STUDIES

ADDIS ABABA UNIVERSITY

IN PARTIAL FULFILLMENT OF THE REQUIREMENTSFOR THE DEGREE OF MASTER OFARTS IN PSYCHOLOGY.

BY

ABIYE HERIPA

JUNE 2004

ADDIS ABABA

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

LEARNING PSYCHOLOGICAL CONCEPTS THROUGH LECTURE VERSUS READING MODULE: AN EXPERIMENTAL STUDY

BY

ABIYE HERIPA

Approved by Board of Examiners

Chairman, Department Graduate Committee	Signature
Advisor	Signature
External Examiner	Signature
External Examiner	Signature

ACKNOWLEDGEMENTS

I would like to thank my Advisor Dr. Belay Tefera for his unreserved assistance and advise as well as communicating my work through out the time. He has devoted his precious time from the beginning of the work up to the last date of submission.

I also owe a great deal to Ato Dawit Legess and Surafel Tilahun for assisting research design, giving peer evaluation and their fruitful comments and edit on the language aspect of the paper.

Finally, I am also grateful to my wife W/ro Hiwot Meberatu who devoted her time and labor in typing the manuscript of my study and she has shared my pain during the work.

TABLE OF CONTENTS Pages

PRELIMINARIES

Chapter one

1. Introduction

Chapter two

2. Literature Review

Lists of tables pages

I. Tables in the review of the literature

II. Tables in the Findings.

ABSTRACT

Method of teaching concepts is one among other factors affecting students' performance but it is not given much attention among educators. This study was based on the premise that research findings contribute to identifying appropriate methods of teaching, which can facilitate student performance. It mainly aimed at investigating the effectiveness of teaching psychological concepts through lecturing versus reading module in Africa Beza College.

The sample consisted of 127 randomly selected second year Accounting students at Africa Beza College, Shashemene and Addis Ababa campuses. Out of the total population of 430 regular students, 30% (that is 127) participated in the study; of which 57 belonged to the control and 70 belonged to the experimental groups respectively. At the beginning, the researcher tried to see their CGPA result to know their achievement and also pre-test was given on the topic of the experiment i.e. memory (Remembering and forgetting). Both results indicate that there were no statistically significant difference between the control and experimental groups at the beginning.

After that, the researcher prepared eleven lessons for control and experimental groups for a period of 4 to 8 weeks consecutively. At the end, post-test was prepared based on the lessons and was administered to both groups. The result showed that there is a statistically significant difference between the control and experimental groups on the topic of memory uses test.

This difference was found among the higher achievers of both the Control and the Experimental groups, where as the difference among the lower achievers of both groups was not significant.

Therefore, the finding of the study shows that reading the material favors high achieving students, in similar manure, the lecture method affects achievement of high achieving students.

1. Introduction

1.1 Background

Instructional objectives, categorized as cognitive, affective, and psychomotor domains, are sought to bring changes in the behaviors of learners. The learners are expected to attain learning objectives via the teaching learning process. Towards the attainment of these objectives, the teachers believe that learning concepts will be effective (true) when they possibly create a conducive atmosphere for the learners. To effect this, teachers need to be acquainted with the necessary knowledge and skill, which are key to methods of teaching.

In addition to knowledge and skills of teaching, the teachers are expected to identify students' level of understanding of the lesson. This means that every student is not equally capable of following the lesson that is provided in the classroom. There are different levels of understanding the lesson; some learners are fast, others are moderate and others are slow. However, in high schools the teacher carries out most of the classroom activities largely by him/her self whereas in colleges teachers are expected to give the input that encourages student to self-learning activities. Teachers have to adjust the lesson as much as possible to the learning preferences of each student in the classroom. With regard to this idea John (1980), stated that psychology is taught as widely and to such a heterogeneous audience, that almost certainly a large variety of methods is desirable. There is of course no one-way of teaching psychology or any other subject. Nor, probably is there any systematic relationship between any dimension such as novelty-on which techniques might be measured, and success rate. Researchers indicate that teaching styles in many places remain traditional, teacher – centered and fairly rigid or even authoritarian.

We observe in the actual teaching-learning processes, that some teachers make use of different activities (giving assignment, paper work and class discussion, providing reading material, etc) while others hardly support their lecture.

In a similar way, Gage and Berliner (1988) defined teaching methods as recurrent instructional process, applicable to various subject matter, and usable by more than one teacher.

However, not all teaching methods are equally appropriate for helping all students to accomplish the goal of instructional objective. Some methods yield better results for the students with certain characteristics, which help them achieve academic success. Others produce less achievement in students with different characteristics and vice versa.

In view of this, it has been the concern of the researcher to find out the best ways and means to make learning possible among learners to bring behavioral changes. With this regard, there have been research works conducted by different scholars on the topic of effectiveness of teaching methods. For instance, the study conducted by White and Rosenthal (1974) compared learning through lecture alone versus presenting equivalent information in part lecture and in part by modeling demonstrations. Although all conditions were initially comparable, it has been found that only the demonstration group improved significantly from pre-to post testing, unlike the lecture group, which did not change.

Similarly, another research conducted by Anderson and Scott, (1978) found out that high-anxiety students achieved more in a lecture method than low-anxiety students, but low-anxiety students preformed better in discussion method than high-anxiety students.

Experience shows that though reading problems are persistent in Ethiopia, there are no reading laboratories in primary, secondary or tertiary levels. The existence of such problem hampers interest that students should need to develop in reading, which could have resulted in good reading performance.

The objective of the study is to identify the best method and more appropriate to different types of students. Determining which method of instruction to use in a teaching program can sometimes be difficult, because there are many different instructional methods, which may be used in a teaching environment. Each method has certain advantages and disadvantages; some are more suited for certain kinds of instruction than others. Each of the different methods requires greater or lesser participation by students. Based on the subject matter, it needs to determine which instructional methods will best show the case the information that you will be teaching. During the course of that we will examine more closely the advantages and disadvantages of each method of instruction and how they can be used to reinforce the teaching points reach the objectives effectively.

Similar remarks suggested by Radford and Rose (1931) say that it is some times a matter of surprise to students that psychologists who, they think, know about learning should rely so exclusively on traditional methods of teaching. Such surprise is only partly justified. Hard evidence on efficiency of the traditional methods has not always been available. Alternative methods are often both unproved and considerably more expensive.

We should, at least, be aware of a range of methods, and try to use the most appropriate one. This should be done through proper investigation about each method. Therefore, as observed by the researcher in his capacity as distance education coordinator and instructor of psychology, in Africa Beza College, although teachers use various methods of teaching they got from in-service training & have received little help from theorists or researchers as to which methods are the best to facilitate learning on the parts of the learners. Even the same subject teachers follow different teaching methods without identifying or considering which methods are appropriate to achieve or meet the goal of instructional objectives.

Therefore, this study attempts to compare the effectiveness of learning concept of psychology through lecture alone versus reading modules on cognitive, affective and behavioral skills of achievements.

1.2. Statement of the problem

Although Africa Beza College (ABC) teachers are using different methods of teaching, there is no systematic research conducted to identify the effectiveness of which method is to be employed by the teachers. As the researcher observed from higher education experience in general, and Africa Beza College (ABC) in particular, teachers get little help from research works as to which method of teaching is identified suitable or convenient for a group of students having certain characteristics or behavior. Also, some literatures reveal that modeling demonstrations method is effective to lecture method. Most of the research findings are over seas; and to the knowledge of the researcher there is no research work conducted by local researchers. But, there is a lot of distance learning use of reading module and classroom training use often the lecture method at higher institutions particularly in private colleges. It is the researcher's suspicion that how far the practices of modern world are suitable for own condition, that is, the distance learning through reading module.

Therefore, the purpose of this study is, to compare learning concepts of psychology through lecturing against reading modules, in relation to learners with cognitive affective and behavioral skills of academic achievements. Finally, it is to see whether it has shown the significant difference between the two methods or not, and recommend the appropriate teaching methods.

The investigator desired to devote some effort to the experimental study of how some aspects of the psychology of learning, namely practice, understanding, and retention, can operate effectively in a particular method of teaching situation. Therefore, the research will be guided by the following research questions.

1. Is there a significant difference in achievement between students studying psychological concepts through reading modules (experimental group) and lecture (control group)?
2. Is there any significant difference in attitude (appreciating) while learning these concept between the two groups?
3. Is there any significant difference of behavioral skills while learning the concept of psychology between the two groups?
4. Do the methods have an impact upon students retention power?

1.3. Objectives

The general objective of the study is to compare the effectiveness of teaching methods of the concepts of psychology through lecture method and reading modules more specifically, the study has the following specific objectives:

1. To find out which of the teaching methods (lecture or reading module) is effective in teaching psychology concepts.
2. To assess as to which of the two methods has significantly brought behavioral changes in terms of cognitive, affective and psychomotor domain in the students
3. To give some possible recommendations to teachers and board of the college as to which teaching method is effective in the teaching-learning process
4. To give some recommendation for those scholars and other colleges how far the found teaching method is important
5. To severe as stepping stone for further research

1.4. Definition of operational terms

Key terms are defined below according to the context used in the experimental study.

1. Concept:- According to Christine and Michael (1997) concept is a mental representation of a category of experiences by allowing us to group similar things together in to categories. In this experiment, concepts are set of characteristic of objective of vents and situations labeled by word or words are creation of the human mind and resulted in behavioral changes.

   Ehrenberg (1978) defined that Concept is mental image of the set of characteristics common to any and all examples of a class. Evidence of conceptualization is the learner's demonstrated ability to consistently distinguish examples from non-examples by citing the presence or absence of the concept characteristics in individual items.

2. Lecture method:- a method of teaching in which the researcher gives oral presentation to regular 2nd, year ABC Accounting students on the topic of memory (Remembering and forgetting) contains 11 lesson for one month(4 weeks) which due 3 contact hours per week.
3. Reading methods:- a method of teaching in which the researcher give the reading module that prepared by researcher for experimental groups on the topic of memory.
4. High achievers:- It refers to 2nd year Africa Beza College regular students who have relatively high academic achievement result of post-test on general psychology with additional first year CGPA in ABC.
5. Low achievers:- It refers to 2nd year Africa Beza College regular students who have relatively low academic achievement result of post-test on general psychology with additional first year CGPA in ABC.
6. Achievement: - It refers to teacher made pre and post-test after one or two months before and after the experiment would be employed for control and experimental groups consecutively. Its refers to the researchers made test, which the students are required to sit for in prior and after the experiment.
7. Control group:- It refers to the group which learns through lecture method of psychological concept, such as memory(remembering & forgetting.) which is exactly the same to the reading module.

8. Experimental group:- It refers to the group that learns through reading modules of psychological concepts, such as memory(remembering & forgetting.) which the researcher adopted from the distance materials.
9. Tutorial class:- is a service given to experimental group once a week to give them highlight and guidance of the reading material so as to motivate students independent work on the materials.

1.5. Limitations

The experiment has encountered the following limitations.

1. As there was no local study conducted on the area, it was difficult to find reference materials, which can be used as direction indicator in relation to the real situation in the country.
2. Regarding the skills tested during the experiment, behavior change should result from cumulative effect of long time. However, the time span used for the experiment is not long enough. But the researcher used the behavioral change, which their effect will be shown within short period of time such as: The concept of Memory (Remembering and forgetting) for narrowing the gaps.

   Similarly as cited in Matlin (1989) memory involves maintaining information over time. You can maintain this information for less than a second, which formed as long as a lifetime. Although the finding of the experiment shows us a significant difference between the two methods within this short period of time.
3. The process of budget allocation for the researcher was great obstacle for the realization of the project. Being self sponsored the researcher couldn't collect the money on time. The procedure of releasing the money for the researcher took long time. This created great pressure on the researcher to fully not to give attention for the project. In addition, it was time consuming and tiresome to travel between Addis Ababa and Shashamene while the experiment was being conducted.

1.6. Delimitation

1. The study was conducted on 2nd year, accounting Regular students of Africa Beza College: Addis Ababa and Shashemene campuses.

   The study focused on the concept of Memory, a chapter from the concepts in 'General Psychology course', which is offered as a supportive course for the students of ABC.

1.7. Significance

Before listing the potential contributions of the results of this study, it is worth mentioning the roles of psychology in the education programme. Psychology is becoming more interesting in applying theoretical advances to every day problems, and students invariably appreciate this type of practical orientations. Also students are usually attracted to study psychology because they hope to gain a better understanding of people. It is also the studying psychology for more specific and personal reasons.

> In similar view, Radford and Rose (1931) indicated, *it appears that psychology is not likely to be as objective study as physics or chemistry. The behavior and experiences of human beings, with which we mainly deal, is clearly the product of interaction between genetic endowment and environment, of which the most important part is almost certainly cultural. But psychology indeed as every sort of study is in itself part of that culture: It helps to form it and is formed by it. A wider cultural awareness has fairly recently come in to psychology.*

Similarly as Glencge (1986) stated "*two things you will gain by learning about psychology are insight into behavior and new practical information on how to deal with situations in every day life. Psychology can provide useful insight into your own and other people's behavior, which is very important in a day-to-day life of individual.*"

Psychology has at least some practical application to ends that are, in themselves, desirable: teaching for example. It might be suggested that, for better or worse, psychological techniques and theories have, largely through such practical applications, contributed much to the nature of our society. This contribution is perhaps less obvious

than that of technology. There can be very few individuals in technological societies who are not affected by schooling, medicine, social services, mass media and advertising, occupational selection and training etc. All these and more are themselves largely shaped by psychology and closely related disciplines. It may well be argued that it is better for the individual to understand something of such forces, how they work or at least are supposed to work. The concepts of motivation reinforcement in human life are very important in their daily life realizing the situation.

Bearing all this in mind, then when we come to specific significance of the study, the students' performance in psychology in each academic year after year indicates that many number of students scored relatively low grades. That persistence problem particularly in the Africa Beza College lead to give make-up and re-exams every year for graduating class students. There fore, as a professional to study the problems of teaching learning shortcoming and finding the solution for the corresponding problems is one of the college's missions. The researcher is therefore part and parcel of the college, (ABC) to find the solution in this regard.

It is expected that the results of this study would be as follows

a) As indicated in the background of the experimental study, the methods in comparison are the two dominant methods used by teachers in Africa Beza College. This study, therefore, would indicate the ways to use the possible methods effectively.
b) It would help in facilitating learning psychology at higher education level particularly at Africa Beza College where ability grouping is being practiced.
c) It will contribute to the improvement of psychology teaching learning at college level.
d) It will help in facilitating learning psychology at Africa Beza College where slow learner (low achievers) could get benefit from the recommended teaching method.
e) It will contribute to the improvement of students' retention, recognition; memory and make them get benefit from the recommended teaching method.
f) The instructors who are teaching in different departments of the college will benefit from the finding of the study in that they will employ appropriate teaching methods in the teaching-learning process.

Chapter Two

2. Literature Review

2.1. The teaching of concepts

2.1.1. What are concepts?

Educators and researchers have been concerned with defining the term concept. Besides, they have been justifying why concepts are taught and should be learnt. Let us explore some of the views given by the scholars. For instance, clear definition and understanding of the term concept as given by klausmeie (1990), that concept is a mental representation of a category of related items. Concept helps us organize our experiences by allowing us to group similar things together into categories. Without this ability, it would be difficult to make sense of the way, many different things we experience in our environment. This idea is exemplified by Bower and Clapper (1989) as they said, when you see an animal coming towards you on the street, you can use your concept of dog to decide whether or not the approaching animal is a dog, rather than a rat or a lion.

As Ehrenberg (1978) stated that process for learning and teaching concepts differs significantly from those appropriate for fact, attitude, and skill learning. Then the lack of understanding of those differences on part of the curriculum developer or the teacher could certainly contribute to student failure to learn concepts.

Furthermore, Novak (1965) justifies while we are studying concepts as …concepts in a discipline can be interpreted as providing the principal structure for the discipline are obtained and enlarged… etc.

One can see from the above definitions that each of the definitions has common elements. They can be condensed that concepts are characteristics of objects, events, situations, people labeled by word or words and are creation of the human mind. Even the ideas of concept are very important aspects of facilitating the process for learning and teaching Activities. In this case, words are symbols; again a symbol is something standing for something else like an object, a behavior or feeling etc.

As Kenneth and Edward (1975) indicated that words or symbols are only a representation of the things and not the thing it self and it means different things to different people.

When teaching one has to give emphasis for concept formation in order to attain at the desired objectives. As a result, the processes and principles are formed as complex concepts. Because a process in a sequential concept, a pattern involving a sequence of events for instance and in performing an experiment in psychology, one is required to digest the concepts constituting the process. To carry out the experiment, the relationship between the principle and concepts should be analyzed in this context. Principle is the relationship between two or more concepts, like the concept of memory which is made up of different concepts such as the concept of strategies of memory and the concept of remembering and forgetting which the researcher tries to facilitate during the experimental study.

In connection to this, Pella (1966) sated that the emphasis on concept development in science has been important and is becoming increasingly important with rapid growth of knowledge. It is the one way known to provide the maximum courage of knowledge because; it is a kind of classification or summarizing system, which results in the conversion of human intelligence.

2.1.2. The formation of concepts.

As Stilling (1987) stated that concepts are defined according to the necessary and sufficient features, and defining features, required for in terms of quality as a representative of the concept. How are such prototypes formed?. They are mental average of many instances; the concept has been previously encountered in the world. Both adults and children construct such method averages.

In similar views, Benjamin (1988) stated that the child learning basic concepts (each child must learn from scratch all of the concepts like bigger, dogs, and rat etc. that we adults take for granted) and for adults learning more complex concepts. Concept formation is a fascinating process.

According to Matlin (1989) concepts are learned more quickly if the relevant attribute is a silent one and the rule is simple.

Similarly, Lask (1974), also conducted a study on 8 years old and adults, and observed patterns of geometric forms and later selected patterns they had been before on a

recognition task. One of the patterns, called a proto-typical pattern, shared features with previously viewed patterns as having been seen previously, even-though it had not been presented. This prototype received even higher ratings than patterns that were actually presented. Thus, the adults and children had formed a prototypical concept and were using it to guide decision-making on the recognition test.

There are a number of strategies through which the learner can be guided so that he/she gathers the appropriate information, processes the information appropriately, and end up with his/her own clear mental image of the concept characteristics.

As it can be summarized from different perspective, the concepts are related to each other in semantic networks in which concepts are stored in nodes with links between the nodes specifying the relationship between the concepts. There are large networks of associations to each of these nodes, with many of the associations being ever personal. This indicates the relationship between concepts. Concepts are hierarchically organized. For example, the concept of memory appears with the concepts remembering & forgetting and these again consist of different sub issues related to each concept such as cause and significant of forgetting, strategies and techniques of memory etc.

According to Collins & Lofts (1975) The associations between nodes are particularly important since activation of any particular part of the network results in spreading activation to part of the hierarchy that are "closer" and more highly associated with the activated concept. Therefore, activating some concept can make it easier to understand related materials. Furthermore, they gave example, like if the word stone is read by a person followed by the word rock; rock is recognized more quickly than stone. Stone had not been activated since the activation of stone can spread to rock, a highly associated concept.

Finally, to let us answer the question what are the educational implications of semantic networks? Teachers often encourage students to activate background knowledge about the material that is to be presented through lecture or reading methods. They may remind students what they learned before starting to teach; they ask students to think about everyday experiences that are related to the topic at hand. This encourages spreading activation through a hierarchical network that encodes many associations between concepts. This activation should make it easier to understand new content and its

relationship to the activated knowledge and try to apply their daily life, which is important for retention.

In similar views, Christine and Michael (1997) stated that sometimes students even reap the benefits of spreading activation while taking a test. Consider the students who draw a link when reading a test question, skips the question and continues with the rest of the test. Later on, another question on the test activates knowledge of the student. The resultant spreading activation brings to mind the answer to the question the student had skipped. There are great advantages having a well-organized semantic network.

2.1.3. Strategies in the teaching- learning of concepts.

Scholars like Smith (1978), Clifford (1981), and Ehrenberg (1981) emphasized the following strategies in the teaching learning of concepts. They are summarized in to three aspects:

a. Inductive and deductive strategies.
b. Proceeding from simple to complex.
c. Proceeding from concrete to abstract.

a. Inductive and deductive strategies

Inductive strategy is concerned with giving examples and forming generalization. In other words, the learner is exposed to information using examples, the information is processed, and the learner is expected to have a mental image of the concept characteristics.

On the other hand in a deductive strategy, a teacher would first present information about characteristics of all example of the concept (a definition or a rule) beside with the concept formation. As Ehrenberg (1981) sated, using a deductive (classifying) strategy a teacher would first present information about characteristics of all examples of the concept (a definition) along with concept label.

Similarly Clifford (1981) said that, the inductive approach has the advantage of letting the student discover the concept. On the other hand, the deductive approach, in which the concept is immediately labeled and defined, has the advantage of taking less time than the inductive approach.

b. Proceeding from simple to complex

Not only in learning concepts but also in other types of learning objectives, it is commendable to follow the strategy of learning from simple to complex for it naturally facilitates grasping the essence of a material. This actually is recommendable in education (teaching learning process).

c. Proceeding from concrete to abstract

As Clifford (1981) states that, it is also advisable to begin with concrete examples and move toward abstract examples as teaching learning progresses or defining concrete concepts and move toward abstract concepts if one is following the deductive strategy. Fundamental to helping students learn concepts are to make these understand that conceptualizing has to take place in the mind of the learner.

That is, the learner needs to establish in his own mind a mental image of the set of characteristics that makes something an example of the concept and that distinguishes examples from non-examples.

It is true that once the student is able to conceptualize, so that, they are able to consistently identify new examples, create new examples, distinguish examples from non-examples, and in every case, is able to explain what he has done by citing the presence or absence of the concept characteristics. The learner can do this because of that he is guided by a clear mental image of the characteristics that should be there in this manner of that, the learner can be guided to gather an appropriate information, processes the information appropriately, and ends up with his own clear mental image of the concept characteristics which more of facilitate teaching strategies and with retention on the subjects.

Ehrenbery's (1981) common learning elements to concept learning strategies are summarized and presented as follows:

1. Students must focus on several examples and non-examples of the concept.
2. Students must gather and verify information as to the concept-relevant characteristics of each individual example and non-example.
3. Students must note how the examples vary and yet are still examples of the concept.
4. Students must note what is alike about all the examples of the concept.

5. Students must generalize that is a like about all the examples they have examined is also true of all other examples of the concept.
6. Students must note how the non-examples resemble examples, but, particularly, how they differ from them.
7. Students must generalize about the characteristics that distinguish all examples of the concept from any item that might resemble them in some way. This all idea about teaching of concepts is very important parts of the strategies used in teaching methods.

2.1.4. Methods of teaching concepts

2.1.4.1. The lecture method

As Mcleish (1968) stated, the lecture has been established for many centuries as the teaching method of choice in higher education. We can trace its origins to the fifth century pre-Christian Academy, the public pleasure-gardens in Athens where Plato and his students for gathered in mediaeval times when manuscripts were scarce and expensive. It was established, as the prime method in university teaching. In earlier times in its more limited way the lecture served the same office. That is, it made it possible to communicate with large audiences in the most economical fashion. Later as practiced in the Universities of Mediaeval Europe, not to speak of the universities of the Muslim East, the lecture developed in to a system where in the lively conversation was changed to the reading of and commentary on a book. As it happened, the lecture had the only available copy. The dogmatic and a priori tone of the aged Plato set the pattern for the formal University system of instruction, which and become closely tied to the professional training of the theologian, the physician and the lawyer.

Similarly, Radford and Rose (1980) stated that the lecture method is frequently criticized, but the fact that it has managed to survive so long in the face of many technological development in communicating knowledge should deter us from writing it off as a means of instruction, and alter us to possible strengths that are neglected by its critics.

Mcleish (1968) states that among the earliest in a centuries-long succession of great scholars to suggest that lectures are outmoded or no longer fashionable or accepted. He studied at Oxford University, and compared lectures there unfavorably with books as a

medium of instruction. He admitted that lectures might have been useful in previous eras, but thought that by his day, "When all can read", lectures were unnecessary. One disadvantage, he noted, was that if a student did not attend to a particular part of the lecture, the point would be lost, and it would not be possible to go back to it in the way that is done when one is learning from a book.

It is true that, one of the main disadvantages of the lecture method then became apparent that it does not necessarily engage the attention nor the active participation to the audience.

Mcleish (1968) adds that the main defect of the lecture system is that there is no guarantee that these purposes are achieved even by the generality of performance. He add that, if we take these declared objectives seriously as the justification of the lecture, it can be asserted with confidence that the number of teachers capable of getting even some way to wards achieving them at the established lecture hour every day for a considerable period of time must be decidedly small.

Another limitation of lecture method was stated by Romey (1968) that the lecture method, although much material was covered and then resulted a small amount is retained. We also see or hear that most of the students complain about the lecture method of teaching. It is true that most of the time, the lecture method of teaching affects talented or able personality of the instructors'. In addition to that it is also affected by, when the content of lecture is boring, poorly organized, irrelevant and redundant.

As the evidence has been surveyed by Mcleish (1968) on Autobiography of Charles Darwin, like Dr. Johnson, viewed lectures were harsh and over whelmingly negative. He wrote that lectures he attended at Edinburgh were intolerably dull and like Johnson, he argued that compared with reading; lecture method had no advantage and it has many disadvantages. His geology and zoology lectures at Edinburgh, Darwin claimed, were so dull that at the time he becomes determined never to read a Single book on the subject. Fortunately, he later changed his mind; favored reading which later changed life success in academic stream.

Advantages and disadvantages of lecture are summarized as follow:

I. The advantages of lecture method:

- The lecture is one of the most efficient teaching methods for presenting many facts or ideas in a relatively short time. Material that has been logically organized can be presented concisely in rapid sequence.
- The lecture is particularly suitable for introducing a subject. To ensure that all students have the necessary background to learn a subject, we can present basic information in a lecture. A brief introductory lecture can give direction and purpose to demonstration or prepare students for a discussion.
- The lecture is a convenient method for instructing large groups. If necessary, we can use a public address system to ensure that all students can hear us. The lecture is sometimes the only efficient method to use if student-to-faculty ratio is high.
- The lecture is often useful to supplement material from other sources or for information difficult to obtain in other ways. If students do not have time for research or they do not have access to reference material, the lecture can fill the bill.
- The lecture allows the instructors to summarize and emphasis on pertinent material reports, current research and information which change frequently may not be easily available in written form, and the lecture can give students the most up-to-date information.
- The lecture allows a large number of students to receive information from real experts in a subject. In general, a person who can speak from actual experience or a scholar who has carefully analyzed the results of research will have great credibility with students. The lecture is often the most effective way of communicating the energy and enthusiasm of a person who has actual experience in a field, thus motivating students.

II. Disadvantages of lecture method:

Although the lecture method can be an effective and efficient teaching method, it has a number of disadvantages.

- The lecture does not lead to maximum achievement in certain types of learning. Speech skills, cooperative group thinking, and motor skills, for example, are difficult to teach with the lecture method. Students can develop such skills well only through

practice. Moreover, the formal lecture alone is generally not appropriate for presenting material above the comprehension level of the cognitive domain. Because it allows little or no student for verbal participation. The formal lecture may also be inefficient for comprehension-level lessons in which concepts and principles are developed.

- The lecture does not provide teacher with an opportunity to estimate students' progress before an examination. Within a single lecture period, we may unwittingly present more information than our students can absorb, and we have little accurate means during the lecture of determining what they have learned.
- Too often, the lecture makes no provision for participation by the students. As a result, many students willingly allow the instructor to do all the work. Learning is an active process, but the lecture method tends to foster passiveness and dependence on the instructor.
- Instructors may have to spend much time preparing for the lectures. With demonstration performance method of instruction, students participated actively. With the case study and guided discussion methods, students participate verbally. The teaching interview release heavily on the knowledge of an expert and provides for students involvement through a question and answer period. But, with lecture, a greater burden for the lesson rests on the instructor.
- Finally, many instructors find it difficult to hold the attention of their students when they lecture for an entire class period. To use the lecture method effectively, we obviously need considerable skill in speaking.

2.1.4.1. The Reading method

Reading is one of the methods that can be used to present a certain subject matter for a group. Matlin (1989) stated his views that, reading is perhaps the most important component of education… In fact, the effects of eliminating written language would be devastating for education.

Hockett (1960) stated that reading and writing are languages and, without any doubt the need to be equally interesting to be investigated and understood. Reading, in particular, is a cognitive skill of tremendous complexity and importance to daily life, and hence,

deserves considerable empirical attention. In fact, one need to note that writing is even more complex.

Similarly, reading requires a wide variety to cognitive skills. As Fisher (1981) noted, it involves sequencing of eye movements, decoding, encoding, and utilizing linguistic awareness. It demands knowledge of orthographic regularity and irregularity. It integrates letters, words, sentences, and passages with past experience. Surely reading is one of our most complex daily activities.

Maxwell and Mueller (1967) examined the relative effectiveness of techniques and placebo conditions in changing reading rate and comprehension which was reported that one hundred and twenty university students were randomly assigned to three treatment groups. A techniques group was given a hand out describing speed reading techniques and told to practice for a week; a placebo group was given a handout designed to motivate them to read faster, and a control group was simply pre and post-tested over a one week interval. All three groups showed post-tested gains after the one-week interval, but the techniques group gained significantly more than either the placebo or the control group.

Thalberg (1967) reported the results of a study designed to determine whether the relationship between reading rate and retention is invariable over time. One hundred and seventy-six University undergraduates enrolled in thirteen sections of freshman English were randomly assigned by section to an immediate or a delayed treatments group and then further subdivided with in treatments in to fast (300 wpm**word per minute*), average (240-299 wpm*), and slow (289 wpm*) reading rate groups. Both treatment groups read the same 1500 word selection, but the immediate groups were tested for compression up on completion of the reading and the delayed group was tested after 24 hours. The average and slow readers attained higher comprehension scores immediately after reading than the fast readers, but the former groups showed a high level of deterioration in comprehension while the fast readers maintained their initial level of learning. The result also suggested that average and slow readers remember more explicit details immediately after reading than fast readers, but since these details extinguish themselves with in 24 hours, in the long run fast readers have as much functional information available to them.

These implications show that reading is a powerful instructional method that enables one to achieve intended objectives.

Thalberg (1967) also adds that a standard methodology in studying reading, still widely in use, is quite straightforward, present subjects with a passage of text, have them read the passage in preparation for a test on the material in the passage, then administer a comprehension, recall, recognition, or other memory-related test. Since much of our reading is for the purpose of learning and remembering what we read. Reading as a task needs to examine on-line reading processes, reading as it happens, to obtain measures of local processing what the subject was reading at this instant in time, how long that word was processed, and so forth. This all indicate (tell) us reading is one of the important teaching method.

Kennedy and Getz (1972) were professors at Illinois State University, where they were among the founders of the new reading program described here. They identified eighteen required objectives that must be completed by the student. Among these an effort has been made to summarize certain relevant results of the experiment:

1. Given materials related to reading at the secondary school level, the student will be able to recall facts related to the need for continued reading instruction at the secondary-school level as demonstrated by achieving 75 percent accuracy on an objective test over that material.
2. Given materials related to reading at the secondary schools level, the student will become aware of the importance of developing those reading skills and interests of high school students that will make them life time readers.
3. Given materials related to word recognition skills, the student will be able to apply the use of context clues, phonetic analysis, and structural analysis to vocabulary study related to specific content fields as demonstrated by achieving 80 percent accuracy on a test covering that material.

The methods used in the above experiment in Illinois University for the reading program were cited as follows:

At the beginning of each semester, students were familiarized with the professional education program in secondary school reading at a general orientation program.

The instructional emphasis throughout the secondary school reading segment of the professional education program was directed towards the attainment of proficiency in the stated competencies and not the amount of time spent in structured classroom settings. Instructional modes were altered as the need arises for the preparation of instructional aids facilitates and the possibility of different instructional modes. The variety of learning modes employed in secondary school reading can be viewed through an examination of the required and optional learning activities.

Students read the worksheet in the Computer Guide or read the typescript under the same title in the professional sequence file in the north reserve room of Milner Library and use the worksheets in their computer guide.

Finally from the program they got results that can be stated as follows:
Although the description of this competency-based program is necessarily brief, it may serve as a springboard for formulating even better means of providing reading instruction, which preserves secondary school teachers.

Though the problems faced in such rapid expansion have been immense, the possibilities for providing personalized and competency-based reading as a means of instruction program were better result at the end of the experiment. Thus, the findings proved that reading was one of the effective instructional methods.

Other scholars also conducted similar studies, which support the above findings. William and Wolf (1966) for instance, stated that the poor reader is basically not so bright as the good reader. This assumption may be true for some poor readers but not for all of them. The person who makes this assumption would probably be stated the suggestion that all tone-deaf people are intellectually inferior. The poor reader may be less verbal than the good reader and may have store less of sort or factual knowledge respected by teacher.

Samuels (1967) examined the effect of word associations up on reading speed and recall to predictions were resulted that a paragraph containing words with high-associative relationships word be read faster and with better recall than a similar paragraph containing words with low-associative relationships.

Reading is the skill that modern man uses most often. This is the assumption of the researcher, which may be true. If you ask students and teachers every-thing they do in

one day, they tell you different activities which necessarily include reading, that regardless of his reading level, and some of this reading is done so naturally so unselfconsciously, that one doesn't ordinarily think of it as reading.

Even, it is true that life of literate people is guided by reading regardless of level of understanding. In contrast to general reading situations, reading in the classroom involves (entails) comprehension to extract massage of reading texts.

The student who come to an awareness of the sorts of reading he does every day will probably come to see how great his need for reading is. And the teacher who comes to an awareness of how his students use reading in the reality of day-to-day existence will be likely to be a more realistic reading program than he had ever thought possible.

However, lack of awareness on how to use reading, as method of instruction by teachers, which originates from their experience of using lecture method, is a serious influenced experience of using lecture method is a serious influenced problem on using the method. When the real situation is observed in tertiary education levels of the country, using reading as a method is not common.

The reading teacher will function best if every one taking reading has volunteered for the course rather than having been assigned to it and students in remedial reading and developmental reading are mixed together in all classes. This will help to alleviate the stigma, which may be attached to remedial reading classes.

Many University teachers assume that reading provides the primary means to acquire the knowledge on which students are examined, the main roles of lectures being to provide necessary guidance and structure, to direct students to sources of detailed information, to integrate information encountered in different sources, and to make students aware of unfamiliar topics and theories, rather than being to provide detailed information. It is felt that reading provides the best method for the learner to acquire detailed knowledge, and that students enter university having already acquired the basic skills necessarily for learning from what they read. (Radford and Ross, 1931).

As observed it is possible involved with teaching psychology experience problems in trying to ensure that students can have ready access to the library refer materials they required, When we come specific to our college the various ways of trying to ensure that

many students can gain access to a small number of library copies. These all have indicated us the disadvantages of not using the reading method.

It is generally assumed that reading skills, like those of writing have been satisfactorily acquired by the time a student enters college.

2.2. The Effect of Oral and Written Input on Memory Processing Capacity.

In recent years, psychologists have attempted to develop theories of memory using the computer as a model. These information-processing theories of memory are based on the apparent similarities between the operation of both the human brain and the computer. This is not to say that psychologist believe that brains and computers operate in exactly the same way; clearly they do not, but enough general similarity exists to make the information-processing model useful. Before looking at specific theories, let's look briefly at the general information-processing model in relation to oral and written input effects. (Benjamin, 1988)

Radford and Rose (1931) examined that reading, and listening to the same message did not produce comparable inference with visualization. Yet, when the subject was induced to treat the message, as a rote string of words instead of visualizing the referent, reading was a more effective means of presentation than was listening. Two interpretations were suggested.

1. Visualization and reading compete for the use of neutral path ways specialized for visual perception.
2. Reading hinders the conversion of input material in to any non-verbal form i.e. reading forces the subject to deal with information in a more exclusively verbal form than does listening.

According to Benjamin (1988) information processing model, memory is a process involving attention, encoding and transfer to storage though the sensory receptors are largely in un-processed form. Attention operators at this level to select information for further processing the row sensory information that is selected is represented, encoded in some form, sound (oral) visual image (written) meaning that can be used in the next stages of memory that is permanent memory store. Each of these memories operates according to different rules and serves some different purpose. Control mechanism would

then transfer selected information in-to more permanent memory storage. As information is needed, it's retrieved from memory; unfortunately some information may be lost entirely, distorted, or completely irretrievable.

Similarly, Matlin (1989) stated that visual stimuli may be translated in to sound during reading. Semantic memory can be reached either directly, through the visual route, or indirectly, through sound route. This indicates that there are two ways in which the visual symbols can be encoded.

Russell (1921) indicated that it is obvious that we often remember what we have seen or heard or had otherwise present to our senses and that in such cases we are still immediately aware of what we remember, in spite of the fact that it appears as past and not present. We may be needed to remember a bit of information that which is not relevant event to our life. However, we must remember our family name for our entire lifetime.

Bandura and Menlove (1966), also support this view by saying that once a person attends to a behavior, it must be remembered if it is to affect future behaviors. These processes, such as imaginary and rehearsal, which enhance memory, are mediators of observational learning.

According to Benjamin (1988) We seem to have one memory store that hold information for exceedingly brief intervals a second memory store that holds information for not more than 30 seconds unless it's "renewed" and a third, more permanent memory store each of these memories operates according to different rule and serves some different purpose. Because information must pass though three closely linked "stages" of memory, which these are the sensory register, the short-term memory and the long-term memory.

According to McGeoch and Irion (1952), the memory of incorrect responses becomes stronger after a certain time than it is immediately after the learning process. Gradually even this retention disappears. When measuring retention, one consequently has to pay attention to two kinds of retention, namely, the retention of the criterion sequence and the retention of wrong responses from the first learning. Both kinds of retention losses consequently are to be explained in terms of factors causing forgetting.

Postman and Reu. (1957), stated that retention as a function of measurement, explains the relationships by supposing the wrong associations to be weaker at the end of the learning

than the correct ones, since the latter ones have received a more frequent differential reinforcement. The rate of forgetting is presumed to be inversely related to the responses would be more quickly superseded than the right responses.

Murray and Roberts (1968) studied the effects of visual and auditory presentation and presentation rate up on the short-term memory span of children. Sixteen girls from each of four age levels, seven, eight, nine, and ten served as subjects. Lists of six digits were presented in a carefully counterbalanced design, by the visual mode-on a film strip-or the auditory mode-on tape at rates of one, two or three digits per second. Within each mode/rate five lists were presented with a 30-second inter list pause during which the subjects wrote down digits recalled. Immediate recall improved with age under all conditions, but the recall of the visual/slow lists improved at a steeper rate than did the recall of the visual/fast or auditory lists. The authors suggested a recency effect to explain the improvement of performance with age for the visual lists. They attributed the more rapid increase with age in responding to the slow/visual lists to the older subjects' greater skill in reading, i.e. with the slow rate the subjects had the time as well as the ability to read and rehearse the items at the time of visual presentation.

Maxwell (1967) reported a study designed to test the assumption by Skinner and other authors of programmed materials that vanishing textual stimuli increase the efficiency of memorization. Thirty-four fourth-grade subjects were randomly assigned to two treatment groups, one given material to be memorized with successively vanishing textual stimuli and the other given the same material with no vanishing on subsequent exposures. The data did not support the assumption that the effect of vanishing stimuli is to increase the efficiency of memorization.

Horoeitz (1968) attempted to describe the differences in selecting, coding and organizing materials between reading and listening as a function of the complexity of materials. Three sets of materials that differed logically, syntactically, and ideologically were presented. Subjects either listened to or read each passage twice under controlled time conditions, and then they either wrote or retold the passage as accurately as possible. Data were analyzed linguistically and cognitive units were scored. Distortions occurred more frequently with listening than with reading. The author concluded that speaking and listening are more naturally related to cognitive, affective, and linguistic processes than

reading and writing and that listening is a "looser," less "inhibited" modality than reading.

2.3. The students Retention

A number of experiments were carried out to answer this specific question about students' retention. Are students capable of deriving as much from a printed material as from the same lecture delivered by an experienced practitioner? To answer this, question the summary of the scholars findings are put as follows.

Trenaman (1951) found that in his experiment's broadcast talks by distinguished speakers of 45 minutes' duration were played over to volunteers consisting of sixty adult students who attended in grammar school. The experiment was planned so that some listeners heard only 15 minutes, some 30 minutes and some the whole 45 minutes of the recorded talk. Immediately after hearing the recording, they were tested to discover how much they had assimilated. He discovered that with the increase in the duration of the talk, the amount remembered thinned out and in the typical case, assimilation began to diminish seriously after 15 minutes. At 30 minutes, most listeners were approaching the point where the total they were taking in was zero. In some cases there was in fact, a loss of material previously learned so that the total amount assimilated as time went on was continuously decreasing.

The result of the experiment is summarized as follows:

Table A: Recall of Broadcast Talk; Trenaman's data

Group Hearing	**Amount recalled immediately, expressed as a Percentage of material heard**					**% Age**
	First 15 Min	Second 15 min	Third 15 Min	Total	Possible Score	% Age
45 min	20	24	15	300	300	20%
30 min	23	27	-	200	200	25%
15 min	41	-	-	100	100	41%

According to Trenman (1951) retention power decreases with the increase of lecture time when he says the situation is, in fact, much worse than appears from these scores, which are mostly, made up from minor points. Hardly a single listener grasped the essential features of the last 15 minutes discussion. A week later it was found that those hearing

only the first 15 minutes recalled twice as much as those who had heard the whole 45 minutes.

These results suggest that oral methods of teaching are not particularly effective as a means of transmitting information, or concepts and understanding of principles, or in applying them. Even more, he pointed out the need for a systematic investigation of the lecture and other teaching techniques, which might be used to support it.

John Mcleish (1968), conducted the Northern polytechnic experiments with the object of testing these conclusions. The result of Mcleish's study is summarized in the following table.

Table B: Group scores: Northern polytechnic.

Type of Group	**Group I**	**Group II**	**Group III**
	Motivated Reading	Motivated lecture	Unmotivated lecture.
Recall score	33.00	26.73	26.90
As a percentage	48.53%	39.31%	39.56%

He compared the motivated reading group, motivated lecture group and unmotivated lecture group. The results indicate that the motivation used had virtually no effect on the amount of the lecture retained by the student. It is also clear that reading the text is more effective than listening to the lecture if as in this case, equal time is available for the "readers" as for the 'auditors" and that a minimal context of relevance is provided. A difference of nine percent is apparent in-favor of reading the text as against listening to the lecture. Like wise, the study result indicates similar out come. Trenaman, (1951) Mcleshi (1968) also proved that readers did more effectively than listeners as it is indicated below.

Table C: reading versus listening to a lecture result:

Type of Groups	**"Recall"**	**"Application"**
Readers	48%	44%
Listeners	39%	38%

The experimenters concluded by re-testing most of the students a month after the lecture. As the results indicated in the above table, 9% difference is seen among the groups under

the two methods of teaching. However, with regard to delayed recall both groups are found to be equal as shown below.

Table D: Immediate Versus Delayed Recall: Northern polytechnic

Types	Immediate Recall	Delayed Recall	Loss
Readers	48%	36%	12%
Listeners	39%	36%	3%

The result of the experiment shows that, as the first experiment had demonstrated that there was no difference between the "lecture in context" and "the lecture out of context". So far as immediate or delayed recall were concerned it was decided straight comparison between readers and auditors would simplify the design, as only two randomized groups would be needed. Finally, still the readers groups 9% exceed in immediate recall than the listeners group (lecture group), while both method, of teaching the same result in delayed recall. Thus, the studies conducted so far and summarized above favor the reading method then the lecture method with respect to immediate recalling.

2.4. The importance of domains and taxonomies in teaching learning process

Domains and taxonomies are related to type of goal. For example, concept in psychology education presumes that their curricular objectives are entirely cognitive (of the mind). However, psych (body under the control of mind) and affective objectives (attitudes and values) are interrelated achieving excellence as educational psychologist. Although it is helpful to consider the domains are frequently interwoven in learning teaching processes.

Bloom's (1979) domains and taxonomies are important in educational objectives, it means explicit formulations of the ways in which students are expecting to be changed by the educative process. That is, the ways in which they will change in their thinking, their feelings, and their actions. There are many possible changes that can take place in students as a result of learning experiences, but since the time and resources are limited only a few of the possibilities can be realized. It is important that the major objectives of the unit of instruction be clear some time it is very important thing that if the work of the instructor is to be guided by some plans.

Bloom's (1979) domains and taxonomies, which facilitate instructional objective in educational system are put as follows.

a) **Cognitive Domain**

Cognitive domain comprised of six levels knowledge, comprehension, application, analysis, synthesis and evaluation. Each sub classification requires the attainments of the preceding classification before it can be accomplished. The cognitive domain is knowledge or mind based. Related to these experiments it has three practical instructional levels including fact, understanding, and application. The fact level is a single concept and uses verb like define, identify and list. The understanding level puts two or more concepts together to form something new. Typical verbs at this level include explain, apply, and analyze, the likes.

According to Bloom (1979) The cognitive domain includes those objectives which deal with the recall or recognition of knowledge and the development of intellectual abilities & skills. It is the domain in which most of the work in curriculum development has taken place and where the clearest definitions of objectives are to be found phrased as descriptions of student behavior.

b) Affective Domain

Krathwohl (1964) divided affective domain in to five levels: receiving, responding, valuing, organization and characterization of value complex.

The affective domain is based upon behavioral aspects related to study and many be labeled as belief. The three levels in the domain are awareness, distinction, and integration. The verbs for this domain is generally limited to words like display, exhibit, and accept, and these apply at all levels.

The affective domain deals with motivation and commitment to ideals.

According to Bloom (1979) the affective domain includes objectives, which describe changes in interest, attitudes, and values and the development of appreciations and adequate adjustment. It has been a difficult task, which is still far from complete. Several problems make it so difficult. Objectives in this domain are not stated very precisely, and in fact, teachers do not appear to be very clear about the learning experiences, which are appropriate to these objectives. It is difficult to describe the behaviors appropriate to these objectives since the internal or covert feelings & emotions are as significant for this

domain as are the overt behavioral manifestations. Then, to, our testing procedures for the affective domain are still in the most primitive stages.

c) Psychomotor domain

Psychomotor domain is skill based. The student will produce certain behavioral product. In this case, the three practical instructional levels related to the experimental study include imitation, practice, and habit behavioral formation from what they learned on concepts of memory during the experiment.

Similarly, According to Bloom (1979) psychomotor domain is the manipulative or motor-skill area. Although we recognize the existence of this domain, we find so little done about it in secondary schools or colleges, that we do not believe the development of a classification of these objectives would be very useful at present.

Bloom (1979) added to that, the psychomotor domain is steeped in a demonstration delivery and the first level, imitation, will simply be a return of the demonstration under the watchful eye of the instructor the practice level will be a proficiency building experience that may be conducted by the student with out direct oversight of the instructor. The habit level is reached when the student can perform the skill twice the time that it takes the instructor or an expert to perform. The delivery is demonstration and proficiency building in nature. The evaluation will be a performance or skill test.

d) Taxonomies

A taxonomy is a simple system for classifying learning objectives with in a given domain. Learning objectives are used to categorize goals for student learning, Taxonomies are based on assumption that different types of objectives are learned through different mental process. The assumption is that achievements of different types of objectives are inherently different, and should match the type of objective.

According to krathwohl (1964) in teaching, Domains and taxonomies can act as a mental checklist for the teacher. By identifying both learning and also the taxonomy category for each curricular objective, a teacher gain configures instruction actually the objective. Analyzing the component aspects of the objectives, all three domains (cognitive, psychomotor and affective) should be combined during teaching and assessment.

Similarly, Bloom (1979) adds that, taxonomy is in which part of the objective stated, the behavior intended and which stated the content or objective of the behavior we then attempted to find divisions or groups into which the behaviors could be placed.
We initially limited ourselves to those objectives commonly referred to as knowledge, intellectual abilities, and intellectual skills. (This area, which we named the cognitive domain, may also be described as including the behaviors: remembering, problem solving, concept formation, and to limited extend, creative thinking).

To conclude this, Bloom took a lead in formulating a classification of the goals of the educational process and headed a group of educational psychologists who developed a classification of levels of intellectual behavior important in learning. This became a taxonomy including three over lapping domains.

Chapter Three

3. Methods

3:1 Research Design

The researcher prepared pre-test to compare and evaluate the difference between the two groups. This is to check the group equivalence from the start. Subsequently, students were assigned into groups, the researcher then, decided to teach the course using the two methods of instruction (lecture versus reading module) and compare as many parameters as possible to determine whether or not lecture and reading module were equal in outcome under the same learning objectives. The design was that lecture group was given 60 minutes of lectures three times per week for one month while the reading group was provided 60 minute tutorial of reading module one times per week for two months, i.e. the researcher simply provides tutorial, encouraged the students to read the module and give feedback on workouts and the marked assignments which included in the module and lecture activities too. Sometimes the groups were given tutorials as part of the process at the end of each lesson. The tutorial is simply to encourage students to read the module and to help in case they encounter problems while reading the module.

This study was basically designed to investigate the relative effectiveness of selected teaching methods as measured by group gain-scores based on the results of pre-test and post-test with a specially designed instrument. To this effect, the researcher designed and compared lecture and reading module as methods of teaching that involve students' achievements in learning psychological concept on memory use.

Qualitative assessment of classroom environment, student evaluations of the course using in the instructional development and effectiveness of assessment instrument, and a common essay types, multiple choice, true false and matching items were used. The final exam was composed of Forty-one questions were given to both group at the end of the experiment (post-test).

Independent t-test's were conducted on the data to determine significant differences between the two methods of instruction on cognitive, affective and behavioral skills of achievement.

3.2. Subjects

The subjects for this experiment were the second year Accounting regular students of Africa Beza College at Addis Ababa and Shashemene campuses who were taking general psychology as supportive course. The numbers of the target group understudy are one hundred twenty seven students were randomly selected. The experiment was part of their regular instruction for both groups. The subjects were of two classes one composed of 67 where as the other group consisted of 57. The same learning material was presented both groups through different methods of instruction.

3.3. Procedures

The experiment was conducted for a period of four to eight weeks. One hundred and twenty seven (127) subjects were selected from the total population of 430, by simple random technique. Pre-test was given to see if the subjects had significant mean difference. The balancing of treatment and control group was carefully done depending on the achievement of the learners. Because, important to control the extraneous factors that might spoil the data. The design was thought in the way the experimental group could not meet the control group as they were in different campuses. It was confirmed that they were equal from the start with regard to their achievement of the subject. It has been determined previously that the students had virtually no previous knowledge of any of those topics used in the experiment This proved at the beginning with use of pre-test result. The result of the pre-test and CGPA (Cumulative Grade Point Average) of the randomly selected subjects didn't show statistically significant difference among the control and experimental groups.

Table 1

Mean difference between the control and experimental groups on College Cumulative Grade Point Average (CGPA) and pretest result.

NO	GROUP	CGPA					Pretest result				
		N	Max	Min	SD (S)	Mean (X)	N	Max	Min	SD (S_2)	Mean (X)
1	Control group (Lecture)	57	4.00	1.02	0.67	2.22	51	12	4	2.19	7.53
2	Experimental group (Reading module)	70	3.52	1.00	0.59	2.29	55	10	4	2.38	7.31
3	Pooled standard deviation	-			0.63	-	-			2.29	
4.	**t-observed**	**0.623**					**0.494**				
5	**t-critical**	**1.96**					**1.98**				

Note:- Pre-test corrected out of 21, α, 0.05 df 125 and df 105 CGPA and pre-test consecutively

When independent sample t-test is computed to asses the difference between the two groups (Lecture and reading module) in terms of CGPA and pretest result at α, 0.05 and df 125, the t-observed was 0.62 and t-critical is 1.96. Therefore, there is no statistically significant difference between the two groups, which reflect the achievement in academic background and concerning the topic memory: Remembering & forgetting which they could learn at initial stage.

The pretest result of both groups also showed that the t-observed is 0.494 and t-critical is 1.98, which indicates that there is no statistically significant difference between the two groups, i.e. both groups they have no information about the topic of memory at the initial stage.

After the pre-test, the researcher gave four weeks lecture for control group where as the experimental group was provided with written modules for two months. Both groups took eleven lessons for consecutive four to eight weeks respectively. (See Appendix VIII)

The lessons were the same, for both groups. The difference was only in the method of presenting the lessons. So as to control variables other than students' academic achievement and teaching methods, like sharing the reading modules and participating in lecture classes and others, the researcher controlled the participants in each method. The researcher himself conducted each of the lessons. The duty of the researcher was tutoring on problem issues and encouraging students' independent learning for reading group. At the end of four to eight weeks, post-test was given to see the effectiveness of both reading

and lecture methods in terms of achievement of cognitive and behavioral skills domains in preparing the lessons. The researcher has to bear in mind that the concepts are built one upon the other sequentially. Attitude scale and checklists were also used on observation for affective and behavioral skills respectively. Finally Focus group Discussion were done with both groups.

3.3.1. Group Equivalence

The present study was an experiment in which treatments were allocated to complete (intact) classes of students. To determine whether there were pre-existing differences between classes, scores on pre-test given to both groups were compared. It was observed that any pre-existing differences were statistically not significant.

3.3.2. Standard of the reading materials

The reading module that the researcher used for experiment was a distance material. The course is Introduction to Psychology, which was prepared in 2002 by St.Marry Collage for the distance learner. It was divided into four modules.

The following are topics of the modules:

Module one: Conceptual and Theoretical framework.

Module two: Foundation of Mind and Behavior

Module three: Psychological Dimensions (Memory)

Module four: Psychological Dimension in Interaction. (Personality)

Each module is divided into units and units in to sections. Each module has an introduction and objectives followed by unit introduction and objectives. The sections that follow under each unit have in turn their own overview and objectives followed by a text discussing the various topics of each section.

The text of each unit also contains activities, self-check exercises at the end of the texts, and a text summary. These all procedures are the main features of the module. Each feature is expected to be included and the features while preparing the module guide the writer. Among the four modules of the course, the researcher used the third module, which is entitled memory: remembering and forgetting. The reason for choosing the topic of memory for the experiment was that memory shows its effect within short period of time. Even with less than an hour. Therefore, it was advisable for the researcher to

conduct such an experiment and see the effect within short interval of time and summarize the result of their effect.

3.3.3. Standard of the Lecture Materials

The lecture material was a modified version of the reading modules to fit classroom presentation. The material was totally identical to the reading module except the method of presentation. Even all activities, which were used in the reading module, were used in the lecture method but with modifications only way to suite the lecture method.

3.3.4. Experimental plan

The researcher selected the subjects for and randomly assigned to them from different campuses. For both group pre-test (See appendix No I) test was given to check prior knowledge of the topic understudy. Though the content provided and lesson plan prepared for the two groups were the same, (see appendix No VIII) modes of delivery of the lesson was quite different. The control group were given lecture whereas the experimental group were provided with reading material (please see appendix No IX). The lecture group had three contact hours per week, which took one month to complete the study where as the experimental group (reading module) had one tutorial hour per week, which took two months to complete the study (experiment).

Finally, post-test (see Table No 2) was given to both groups to see if there were significant differences in achievement between the two groups.

3.4. Instrument

The instrument comprised 21 items of pre-test in accordance with Bloom's taxonomy including the degree of difficulty and discrimination level. And for the post-test, 41 question items on the same sub-topic i.e. concept of memory were prepared using table of specification. Performance from subjects' post-test had some indication to classify the subjects as low and high achievers in cognitive, affective and skills in addition to the result of pre-test. In addition, the researcher prepared and used checklist, focus group discussion and observation as a means of measurement tools of behavioral skills and attitude. For the diversity, the researcher prepared the skilled nature exam, which contained 7 questions analysis, its result. (See Appendix VI).

Furthermore, the researcher used reading materials devised by Dr. Belay Tefera, thesis advisor, which was professionally prepared for distance learners by his permission. After some minor revisions and modifications were done, the instruments were used for both groups with different technical of presentation (control and experimental). Hence, the teaching methods were designed to teach principles and concepts of an introductory course of psychology on the specific topic of "Memory, Remembering and Forgetting.

Furthermore, the researcher used reading materials devised by Dr. Belay Tefera, thesis advisor, which was professionally prepared for distance learners by his permission. After some minor revisions and modifications were done, the instruments were used for both groups with different technical of presentation (control and experimental). Hence, the teaching methods were designed to teach principles and concepts of an introductory course of psychology on the specific topic of "Memory, Remembering and Forgetting.

Chapter four

4. FINDINGS

Table 2 Mean Comparison between post-test result of control and experimental groups on the achievement on the concept of memory test.

4.1. Post-test result

The finding of the study is summarized in the following table.

Groups	N (subjects)	Mean	Standard deviation (SD)	Max	Min	(α, 0.05,df 105)	
						t Critical	*t* Observed
Control (Lecture)	57	23.74	17.18	32	16	1.96	2.76
Experimental (reading module)	70	25.83	18.28	32	15		

Note: - Post-test result corrected out of 41 P<0.05

The researcher gave post-test after two months on both lecture and experimental group. The result of the study shows that there was statistically significant difference at α, 0.05 (**t**-observed, 2.76>**t**-critical, 1.96) between the two groups. This, finding indicates that the experimental group (reading module) performed better than control group on Post-test.

In order to see this difference between the low and high achievers, the researcher took the upper 22% and the lower 22% from each group of the study whose result was summarized and presented below.

Table 3 . High and low achievers of both control and experimental groups on post result the topic of memory test.

Methods	Groups							
Lecture (Control) N,13	**High Achievers (α, 0.05,df,26)**				**Low Achievers (α, 0.05,df,26)**			
	X (mean)	SD	**t**-critical	**t**- ob	Mean	SD	**t**-critical	**t**-ob
	29.54	1.28	2.064	2.11	18.38	1.39	2.064	0.47
Experimental (Reading module) N,15	30.46	1.02			18.73	2.38		

This data shows that there is no statistically significant difference between the low achievers of the control and experimental groups (**t**-observed 0.47, **t**-critical, 2.06) where as there is a statistically significant difference between the upper lecture group and upper reading module group i.e. (**t**- observed, 2.11, **t**-critical, 2.06).

4.2. Student attitude towards the methods of teaching.

With regard to students' attitude on both the lecture and reading modules, the researcher developed a multidimensional attitude scale to measure interest, feeling, opinion and behaviors related to lecture and reading module. The following lists of tables are used to present the summery of these results.

Table 4: Te attitudes of the two groups towards the teaching methods

	No	Attitude Questions	Groups and responses							
			Agree to strongly agree		Uncertain		Disagree to strongly disagree		No response	
			Exp. Gr.	Con. Gr.	Exp. Gr.	Con. Gr.	Exp. Gr.	Con. Gr.	Exp. Gr.	Con. Gr.
methods	1.	Like the methods	37 (53%)	16 (28%)	15 (21%)	7 (12%)	18 (26%)	24 (42%)	0	10
	2.	Work assignment	45 (64%)	30 (53%)	10 (14%)	10 (18%)	15 (21%)	11 (19%)	0	6
	3.	Positive attitude toward the methods	35 (50%)	23 (40%)	15 (21%)	4 (7%)	20 (29%)	25 (44%)	0	5
	4.	Enjoyed dealing with the methods	39 (56%)	31 (54%)	10 (14%)	8 (14%)	21 (30%)	13(23%)	0	5
	5.	Feeling of like the methods	37 (53%)	12 (21%)	13 (19%)	8 (14%)	16 (23%)	32 (56%)	4	5
	6	Method is threatening	27 (39%)	40 (70%)	14 (20%)	10 (18%)	29 (41%)	7 (12%)	0	0
	7	Method is stressful	30 (43%)	44 (77%)	10 (14%)	6 (11%)	30 (43%)	7 (12%)	0	0
	8	Negative attitude toward the methods	23 (33%)	30 (53%)	10 (14%)	6 (11%)	39 (56%)	21 (37%)	3	0
others	9	Get moody (depressed) and not able to follow the methods	27 (39%)	44 (77%)	11 (16%)	3 (5%)	28 (40%)	5 (9%)	2	5
	10	Participation in tutorial or class	42 (60%)	40 (70%)	11 (16%)	10 (18%)	15 (21%)	7 (12%)	5	0
	11	Wiling to attend tutorial or class	40 (57%)	22 (39%)	11 (16%)	10 (18%)	19 (27%)	25 (44%)	0	0
	12	Face trouble deciding what to write down as the note	23 (33%)	38 (67%)	10 (14%)	10 (18%)	34 (49%)	9 (16%)	3	0
	13	Miss a point	30 (43%)	47 (82%)	10 (14%)	8 (14%)	30 (43%)	2 (4%)	0	0
	14	Get sleep	27 (39%)	30 (53%)	15 (21%)	10 (18%)	28 (40%)	17 (30%)	0	0
	15	Do not know how organize	35 (50%)	25 (44%)	10 (14%0	5 (9%)	20 (29%)	27 (47%)	5	0
	16	Problems in communication with colleagues	27 (39%)	19 (33%)	10 (14%)	0	24 (34%)	32 (56%)	9	6

In general, as we can see from Table 4, students' who learn through reading module show positive attitude towards the method than lecture group. As a result, they participate in the tutorial class, work assignments on time, willing to attend tutorial classes, etc. than the control group. And this attitude of the group resulted in significant difference in achievement and other related tasks.

4.3 Memory skills results

Question forwarded orally to the students (Lecture and reading) to measure their memory skills are presented as follows: (see Appendix No VI)

1. For question one, listen and write down on your answer paper after hearing the following terms (hint: use your background on memory lesson).

Table 5 Memory skills Results (Delayed Recall.)

Groups	Questions	Right	Missed
Control group (Lecture) N, 57	SR	35	22
	STM	25	32
	LTM	24	33
	SPE	32	25
	MCD	20	37
	Total	**136 (48%)**	**149 (52%)**
Experimental group (Reading) N, 70	SR	65	5
	STM	50	20
	LTM	42	28
	SPE	60	10
	MCD	30	40
	Total	**247 (71%)**	**103 (29%)**

From the above table, it can be recognized that the experimental group (247) got correct answer where as 103 did not get correct answer. Hundred and thirty six of the control group however got the correct answer was, as 149 did not get correct answer in five questions. When we compare the two groups, the experimental group achieved better than the control group who are more familiar to the term for they repeatedly read the module than the control group and the lecture group might not properly took when the lesson was delivered in the class. Once lost the note of lecture not favored to rehearse to improve retention.

Question No 2. Refers to common skill measurement questions for both groups i.e.

"English was born in England
Well spoken in America
Sick in India
and died in Africa"

Was read aloud with massed repetition (4 times) and the students were required to write down on their answer sheet by using the common background of memory in this case both groups response are presented as follows:

Table 6 Memory Skill Test On Immediate Recall.

No	Groups	Right	Missed
1	Control group (N, 57)	42 (74%)	15 (26%)
2	Experimental group (N, 70)	52 (74%)	18 (26%)

Table 6 shows that 74.29% of experimental group and 74% of control group responded correctly. Both groups have some how the same result. The researcher assumed that the question is equally difficult and new (unfamiliar) to both the experimental and control groups. Which is not found on the module and on the lecture. It doesn't favor any group, but rather the experiment applied their memory skill to write down properly.

3. For question No 3 refer to *"Memory is the warehouse of information that is retrieved for the use of processing*"

Was read aloud 4 times with interrupted repetition. The students were made to write down on their answer papers by using the knowledge of their memory lesson and skills. Their responses are presented in the following table:

Table 7 Memory Skill Results (Delayed Recall)

No	Groups	Right	Missed
1	Control group (N, 57)	28 (99%)	29 (51%)
2	Experimental group (N,70)	47 (67%)	23 (33%)

The data in the above table indicate that 49.12% of the control group and 67.14% of the experimental group responded correctly.

As the data presented in table 7 reveals, the experimental group achieved better than control group in massed and interrupted repetition. Therefore, the researcher assumes that the experimental group (reading the modules) is in favor of having the reading material when they are compared to lecture group. Since the skilled exam directly refers to the module and lecture, the experimental group has the module to read properly, used to remember, whereas the control group were not properly heard of the lecture and also had problem in taking notes and that is why they missed a lot. (51%).

4.4 Study skill follow-up checklist.

The researcher conducted an observation during the lecture class and tutorial time using checklist and filled for 10 each of the control and experimental groups where individuals in the group were given points. (Look at appendix No vii and table 8) the mean averages of the points were computed for the study weeks from first week through eighth weeks. Using 9 items, which are referring to students` behavioral and tasks to learn in relation to "yes" or "no" scale values, completed the checklist.

Table 8: Comparison **of student's behavior and task to learn for both groups.**

The table below summarizes the data obtained during the study weeks of the researchers observation.

In this case the mean average computed for the only "Yes" scale value each of the ten students from both groups.

No	Items (Behavior)	Control (Lecture group)					Experimental (Reading module)								
		1st mean	2nd mean	3rd mean	4th mean	Average mean	1st mean	2nd mean	3rd mean	4th mean	5th mean	6th mean	7th mean	8th mean	Average mean
1	Readiness	0.5	0.8	1.0	1.0	**0.83**	0.5	0.5	0.5	0.5	0.8	0.8	0.8	1.0	**0.68**
2	Listen attentively	0.5	0.8	1.0	1.0	**0.83**	0.6	0.6	0.8	0.8	0.8	0.8	0.8	0.8	**0.75**
3	Follow directions	0.8	0.8	0.8	0.8	**0.80**	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	**0.96**
4	Completes work on time	0.3	0.3	0.5	0.8	**0.48**	0.6	0.8	0.8	0.7	0.7	0.8	0.8	0.8	**0.85**
5	Maintains orderliness	0.8	0.9	0.9	1.0	**0.90**	0.5	0.5	0.5	0.5	0.8	0.8	0.8	0.8	**0.85**
6	Organized thinking*	3.3/50	--	--	--	**66%**	3.6/50	--	--	--	--	--	--	--	72%
7	Knows the aim of lesson	0.5	0.5	0.8	0.8	**0.65**	0.8	0.8	1.0	1.0	1.0	1.0	1.0	1.0	**0.95**
8	Work independently	0.4	0.5	0.6	0.6	**0.53**	0.8	0.8	0.8	0.8	1.0	1.0	1.0	1.0	**0.90**
9	Class attendance	0.8	1.0	1.0	1.0	**0.95**	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	**0.98**

* Students were given an assignment & present in the class or at the tutorial session.

Table 8 indicate that students behavioral and their task at the end each lesson for both groups. Ten students were randomly selected from each group. The researcher made them fills "Yes" and "No" question across seven (7) item and mean of their response were taken for the whole discussion times. The mean score of the students' response (Yes) of the both groups show increasing trend during the study.

In item No 6, organized thinking, also the experimental group shows higher achievement than the control group. In item no 9, the researcher took daily class attendance for all students of control and experimental group.

This trend shows that both groups have shown gradual increase and improvement on the items as they proceed from 1st to 2nd week, 3rd to 4th and so on. This change and improvement is the result of help, guidance and strict follow-up by the experimenter to motivate the control and experimental groups. The proceeding shows improvement to words the attainment of goal. As a result of the service rendered the groups were able to show the change in a positive direction. Because, the help motivated them to follow the direction that they pursues and at the end, the mean average were computed.

As one can see from Table 8 for the responded behavior of the subjects' toward 'completes of work on time', 48% of the control and 85% of the experimental groups could do their continuous assignments and submitted to their instructor'.

In Table 8, (question No 8) indicates that, 53% of control group and 90% of experimental groups work independently on their continuous assignment, activities and the subject of their studies. From this data, one can understand that, students who learn through reading method developed the skill of independent work, which resulted in better achievements.

4.5. Focus group discussion and observation results

The leading questions:

1. What knowledge did you achieved from our lesson so far? (Cognitive)
1. How did you feel about our lesson so far? (Affective)
2. How do you think our lesson so far, is going to affect your learning behavior (Skill)?

For the experimental and control group focused group discussion was conducted on the following questions. Besides the discussion, the researcher has recorded his observation while the study was conducted, based on the above leading questions.

I. Report on focus group discussion among control group.

The control group who learned the material through lecture method responded to the question as follows:

The group said that they understand the lesson during lecture hours. But, they did not rehearse the lecture material, they could not easily remember during the time of exam. By extending, their response to the question, they stated as follows: When the learned materials are presented one after the other, we forget the previous lecture in order to learn the new material (lecture).

This was happened mainly because we have no ground how to take lecture notes which is attributed to language problem.

In addition as the lecture time is extended, we happened to feel boring to listen to the lecture. Because of the fact that we are provided lecture in mass, we all feel that as if we equally understood the material. This does not encourage us to compete to learn more. Some times we borrowed lecture notes from each other to sit for exam. This could not provide much information to withstand the challenge of exam.

From these interview report and personal observation, one can understand that lecture method of teaching psychological concept is found ineffective to bring about the desired behavioral change in the students.

II. Report on focus group discussion among experimental group.

The experimental group who learned the material through reading the module responded to the above question as follows:

Though English language is a common problem for all of us, since the materials are at our hands, we can refer to the dictionary. We prepare our notes in our own language from the reading module. Some times, we conduct group discussion to help each other. In such a way, we learned the material in detail.

In addition to the above responses, they said that every one of us was encouraged by activities given in the module. Each student felt sense of competition among each other for the fear that the one that learned well might score the highest mark which adversely affect students' grade. Therefore, this developed a skill of students' independent study.

Lastly, with the regard to skill they developed, the students responded as follows: We found reading module as interesting. Because, in the first place it imparted a skill of independent learning in us. Secondly, we developed a skill of memory art. By using the knowledge we got from memory, we can use the skill to learn other materials.

From the above response of the students, we can understand that the teaching concept of psychology through reading module is found effective to bring about the expected behavioral changes in the students.

Table 9: Comparison of students' result on performance of activities (cognitive) between the two groups (lecture and reading module).

Methods	N	Min	Max	SD (S)	Mean X	t-ob	t-crti (df 18, α0.05)
Control (Lecture)	10	19	30		25.5	1.196	2.101
Experimental (Reading)	10	26	34		30.1		

*** P<0.05**

The date in Table 9 indicated that there is a spastically significant difference between control and experimental groups in achievement of activities given in the lessons at 0.05 alpha level. This is may be the students were work on the assignment at home bases work with the groups and copies from somebody else.

In both cases (methods) the low achievers were not favored because they were unable to cope-up with both situations (methods), neither the lecture nor reading module.

Chapter 5

5. DISCUSSION

In the analysis of both the qualitative and quantitative data, the researcher employed such statistical tools as mean, standard deviation, and t-test to see the significant difference between the two methods. Qualitative data analysis such as observation, checklist, focus group discussion and attitude scale were used to see the deference's between the control and experimental groups.

Gage and Berliner (1988:400) state, *teaching methods are often compared on their end product the change in student knowledge, understanding or attitude that follows a period of teaching.*

It is possible for one to compare the views stated above which confirm with the finding of the present study as the post test result result indicated the differences in effectiveness of teaching method. The post test (page 40) attitudinal scale (page 42) focus group discussion and behavioral skills of the scores show differences in experimental and control groups in a similar manner.

The researcher administered both pre and post-tests for the experimental and control groups. The pre-test result indicated that there is no significant difference at the beginning between both groups. (Experimental and control groups).

However, after carrying out the experiment, the result of post-test reflected significant difference in student retention ability where the experimental group (reading module) exceeded the control group (lecture group).

Former studies by Trenaman, (1951) also confirm that with an increase in the duration of the lecture, the amount of information students remember thinned out and in the typical case assimilation began to diminish seriously after 15 minutes.

Similar to Trenaman (1951), Mcleish (1968) proved that "*readers did more effectively than listeners.*"

The present finding could even be more interesting when seen in relation to the length of time, which is allotted to lecturing. Lecturing is commonly done for more than an hour. In such lengthy lecture many classes were delivered without giving time to students to process the facts, which resulted in, reduction of retention. Also the present findings have got some sort of synonymy with previous studies. As Trenaman, (1951) stated the lecture group is not favored since retention (memory) decreases after the first 15 minutes which is contrary to the real situation of the country where 55 minutes or even more (in most cases) are used for lecturing at tertiary level. In this particular case (which actually can be generalized) the group which was given reading module was favored for the post-test in that they have the reading material at hand to refer and prepare themselves when even they are interested to get passing grade (which is actual situation) for the post-test.

The study confirms that there is a significant difference between the two groups (lecture & reading module) on the topic of memory (Remembering and furcating).

The question renames as to which achieving group is responsible for such significant differences. For examples, is this difference observable both in high and low achieving groups?

The findings have shown that there is no significant difference between the lower achievers of experimental and control groups which measure on the topic of memory after two month of the study however, there is a significant difference between high achievers of the experimental and control groups. (See Table 3)

Therefore, in this case, the significant difference between the lecture and reading module groups is due to high achievers of the two groups.

As it is discussed above, high achievers of the lecture method are disfavored as their retention decrease with increasing lecture time and they couldn't cope-up with the post-test effectively. In contrast, the high achievers of the reading module were favored as they have the reading material at hand, they can read rehears and understand which in turn helped them to increase their retention and to score higher grade the post-test.

Therefore, the finding of the study shows that reading the material favors high achieving students, in similar manner, the lecture method affects achievement of high achieving students. It confirmed by Romey (1968) said that the lecture method of teaching affects talented or able personality.

Regarding the attitude of both groups towards the methods of teaching (lecture and reading module), Anderson (1982) states that interest fosters great selective allocation of attention to the processing of a method (text).

Similarly Fraisse and Piaget (1964) stated that... all the past experiences that have 'interested' the subject, both as cognitive and as react-ional data, are fixed and retained by means of this mechanism of incorporation into a system of persistent need. Based on this facts, the finding here also reflected that the control group has extremely disliked the lecture method of teaching whereas the experimental group positive attitude towards reading modules. (See **table 4**). This shows that due to the negative attitude they have towards the method of the lecture, they pay little attention to the lesson during the lecture and this also resulted in failure on the achievement (post-test). On the other hand, the experimental group which has got better interest towards the method (reading) was led to give attention to the processing of the text, which resulted in success in the post-test.

In addition, the control group was not interested to follow lecture lessons as they get depressed during lecture whereas the experimental group favors (has got interest in) attending tutorial classes (**see table 4** and question No 12).

As Allingion reading center guide to schools stated, the lectures do not lead to maximum achievement in certain types of learning. Speech skills, cooperative group thinking, and motor skills, for example, are difficult to teach with the lecture method. Students can develop such skills well only through practice. Moreover, the formal lecture method. Students can develop such skills well only through practice. Moreover, the formal lecture alone is generally not appropriate for presenting material above the comprehension level of the cognitive domain. Because it allows little or no student for verbal participation. The formal lecture may also be inefficient for comprehension-level lessons in which concepts and principles are developed.

Therefore, both the finding of this study and lecture reveal that the lecture method was found to be not attractive for the students to learn. Because of this, some of the student in a lecture class was more absent than the experimental group from the class during the study. Instructor's classroom attendances for groups showed that 95% of the control group was as

98% of the experimental groups attended the lesson with out absent. (See table 8 questions No 9)

Similarly, as the responses to question number 15 (Table 4) indicated, reading module group is better in terms of getting sleepy while following tutorial sessions or reading module for extended time. But compared to the experimental group, the control group is getting sleepy while following lecture classes of extended time and then not properly caught lecture notes, which resulted in loss of retention. In addition to this, the researcher get the opinion of the subjects during focus group discussion.

This result is synonymous with the result of post-test as it indicates the reading module is favoring the group not to be sleepy and get better results as compared to lecture group. These findings confirm to studies of Trenaman (1951). As the lecture time increases the retention become less and less.

The results of memory skill test show that reading group performed far better than the lecture group. That is, the experimental group-has got high retention power due to use of proper memory skills background. However, the lecture group didn't succeed as such in memory skills, because they missed the lecture notes for reference and as a result they couldn't use the memory skills properly. (**Table 6 and 7**).

Hockett (1960) stated that reading and writing are language and, without any doubt the need to be equally interesting to be investigated and understood. Reading, in particular, is a cognitive skill of tremendous complexity and important to daily life.

Hence, both the result of the study and the above-mentioned literature confirm that reading significantly develop memory skill than listening in the learners.

The data in **Table 6** enables us to check the appropriateness of the above difference as one instance where both groups were given common items for testing immediate memory skills. The result has shown almost equal performance by the two groups (lecture and reading module). This indicates that the control group and experimental group are not favored from methods as it is neither from lecture nor reading module. (**See Table 6).** This show that there is no difference in immediate memory skills rather availabilities of learning materials bring differences in delayed memory that use of memory skills.

As Mcleshi (1968) stated, the difference was seen between the to groups not in immediate recall. But the difference was seen delayed recall.

In contrast to the above finding this study shows that there was no significance difference between the control and experimental groups in immediate recall. However, the difference was observed in delayed recall.

The researcher attempted to conduct follow-up observation for both groups to motivate them towards the attainment of the aim of the experiment. From the observation result of the items (**Table 8**) the groups were found to be on progress except on items No 4 and 8, which show significant difference. That is based on the data obtained, the experimental group became better than control group in understanding the aim of the lesson and developing independent work during the experiment. As the result of this, students under control group were not able to understand objectives of the lesson in detail and then they were not able to carry out independent work in accordance to the lesson objectives.

The researcher gave an assignment to both groups so as to measure their organized thinking. The purpose was to see how they organize their ideas, proficiency, flow of idea, coherence, etc. observation check list was used to measure each groups activities finally, it was found that the experimental group (72%) where as the control group did (66%). Hence the experimental group performed better than the control group (see Appendix Vii).

As the researcher conducted focus group discussion between the control and experimental groups, the control (lecture) group most of the time depend on their lecture note. The method is not motivating them for work independently. Where as, the experimental group, the method itself initiates them to work more independently.

It is assumed that this is proved by the result of post-test, which indicated failure of the group. In contrast the experimental group became successful, as they better understand the objectives of the lesson and could carry out independent work as per fulfilling the objectives of the lesson. The focused group discussion result shows that student who learns the material developed a skill of memory and independent work in better way than the group who learn through lecture method.

Similarly, Radford and Rose (1931) findings confirm that, reading and listening to the same message did not produce comparable inference with visualization. Yet, when the subject

was induced to treat the message as a rate string of words instead of visualizing the referent, reading was a more effective means of presentation from was listening.

6. Conclusions and Recommendations

6.1. Conclusions

Based upon the findings discussed so far the following conclusions can be made:

1. The finding of the study shows that there is a statistical significant difference between control and experimental groups. This meant that students who learn through reading module are at better position in retention when compared to students who learn through lecture method.

2. Attitudinal scale measurements given to test a difference between the two groups shows significant differences. This means that majority of experimental group favored the reading module method, where as majority of control group disliked lecture method.

3. In the skill of independent work and memory skill the experimental group exceeds the control groups. In addition, the subject memory skill assessment indicates that, the experimental group display design score in seven questions, which were taken from the lesson materials and the lecture. But, in one question, which was not mentioned in the texts and the lecture class, both groups showed that equal in performance. From this point, the researcher concluded that the experimental group who had reading materials at hand has the possibility of repeatedly reading the terms than the lecture group who do not have the materials at hand. As both scores on one question out side of the text and lecture are almost the same, the researcher concludes that both do not differ in memory skill.

4. Classroom observation reveals that student who learn through lecture method have superior attention to speech than experimental group.

In general, because of the fact that the student who are in experimental group stood at better position in achievement test and attitude scale, and from checklist and personal observation of the researcher, it can be concluded that the reading module has 'great impact on students' retention power than lecture method. Especially on high achievers. It

was induced to treat the message as a rate string of words instead of visualizing the referent, reading was a more effective means of presentation from was listening.

6. Conclusions and Recommendations

6.1. Conclusions

Based upon the findings discussed so far the following conclusions can be made:

1. The finding of the study shows that there is a statistical significant difference between control and experimental groups. This meant that students who learn through reading module are at better position in retention when compared to students who learn through lecture method.

2. Attitudinal scale measurements given to test a difference between the two groups shows significant differences. This means that majority of experimental group favored the reading module method, where as majority of control group disliked lecture method.

3. In the skill of independent work and memory skill the experimental group exceeds the control groups. In addition, the subject memory skill assessment indicates that, the experimental group display design score in seven questions, which were taken from the lesson materials and the lecture. But, in one question, which was not mentioned in the texts and the lecture class, both groups showed that equal in performance. From this point, the researcher concluded that the experimental group who had reading materials at hand has the possibility of repeatedly reading the terms than the lecture group who do not have the materials at hand. As both scores on one question out side of the text and lecture are almost the same, the researcher concludes that both do not differ in memory skill.

4. Classroom observation reveals that student who learn through lecture method have superior attention to speech than experimental group.

In general, because of the fact that the student who are in experimental group stood at better position in achievement test and attitude scale, and from checklist and personal observation of the researcher, it can be concluded that the reading module has 'great impact on students' retention power than lecture method. Especially on high achievers. It

confirmed that by Romey (1968) stated the lecture method of teaching affects talented or personality.

6.2. Recommendations

1. Teaching method using reading module favored high achievers and this fosters instructors to use as important method of instruction at tertiary level.
2. The result of this study pinpoints that other researchers to conduct further study on lecture method of teaching, which is used by in almost all institutions of tertiary level. In addition researchers should look for any method which could favor low achievers in a positive direction.
3. To improve the quality of education, institution should evaluate their methods of teaching as per student interest and ability and use the proper teaching method or methods in combination even.
4. As the result indicated, the instructor should try to use reading method, which was not properly used so far, for the higher achiever through distance Education.
5. The study indicated that lower achievers of both groups were equally favored in negative direction. This shows that they did not benefiting from both methods. Therefore, it is possible to recommend that if teachers use lecture method for lower achievers, they should provide the whole lecture material with extra coaching and if they use reading modules, the teacher should use constant tutorial with follow up.
6. Reading center must be arranged at the college level.
7. Language laboratory, which facilitate reading skills among the student at elementary, joiner and senior secondary school. is very important as developing the reading method became usable by others.

References

Allington Reading Center Guides School The Ledger – Com. htm. (3/23/2004).

Anderson, L.W. and Scott, C. C.(1978).The Relationship Among Teaching Methods, Student Characteristics, and Student Involvement in Learning , Journal of Teacher Education, Vol. 29, No 3, PP.52-58.

Anderson, R.C. (1982) .Allocation of Attention During Reading. In A. Flammer and W. Kintsch (Eds), Discourse Processing (PP. 292-305) New York: North-Holland.

Bandura, G.J. and Menlove, F.L. (1966). Observational Learning as A Function of Symbolization and Incentive Set. Child Development, 37, 499-506.

Benjamin B.L. (1988). Psychology and Introduction. Ma Graw-Hill Companies, Inc U.S.A.

Bloom S. B. (1979). Taxonomy of Education Objectives Long Man Group Limited London.

Bower, G.H. & Clapper, J.P.(1989). Experimental Methods in Cognitive Science. In M.I. Posner (ed) Cambridge: MIT Press.

Brown, G. (1978).Lecturing and Explaining, Methuen, London.

Christine B. C. and Michael P. (1997). Educational Psychology, Learning, Instruction, Assessment. Donnelley and Sons Company.

Clifford, M.M.(1981). Practicing Educational Psychology, Houghton Mifflin, Boston. (PP.282).

Collins, A.M.and Lofts, E.F. (1975). A spreading-Activation Theory of Semantic Processing. Psychological Review 82,407-238.

Ehrenberg S. D. (1978) Building and Applying Strategies for Intellectual Competencies in Students, Participant Manual. A Coral Gables, Fla. Institute for Curriculum and

Instruction. Journal of Educational Leadership.

Fraisse P. and Piaget J. (1964). Experimental Psychology its Scope and Method. IV Learning and Memory. Basic Books, Inc. New York.

Gage, N.L and Berliner, D. C. (1988). Educational Psychology Houghton Mifflin, Boston.

Glencge, M.H. (1986). Understanding Psychology. Mission Hills, California.

Hockett, C.F. (1960). Logical Considerations in The Study of Animal Communication. In W.E. Lanyon, and W.N. Tavolgal (Eds). Animal Sounds and Communication (pp392-430) Washington, Dc.

Horowitz, M. W. Organizational Processes Underlying Differences Between Listening and Reading as A Function of Complexity of Material, Journal of Educational Research, ix (1968), P 297.

John R. A. (1980). Cognitive Skills and Their Acquisition, Lawrence Erlbaum Association, Inc. New Jersy.

Kennedy D. L. and Getz G. H. New Reading Program. Journal of Reading. Vol. 16, No. 1-8, (1972-73).

Kenneth K. S. & Edard M. B.(1975). Trans-per Pnderstanding Human Communication. Houghton Mifflin Campany, Boston.

Klausmeior, H.J. (1990). Conceptualizing Dimensions of Thinking and Cognitive Instruction. HillsDale, NJ Erlbaum. (PP 93-138).

Krathwhol, D. R. (1964) Taxonomy of Educational Objective. The Classification of Educational Goals. Handbook II: Affective Domain. New York: David Mckay Co., Inc.

Matlin, M.W. (1989). Cognition. HOIL, RINEHART AND WINSTON, INC. For worth

Chicago San Francisco Philadelphia Montreal Toronto London Sydney Tokyo.

MaxWell, M. J. and Mueller, A. C. Relative Effectiveness of Techniques and Placebo Conditions in Changing Reading Rates" Journal of Reading, xi (December, 1967), PP. 184-191.

Maxwell, W. J. Effect of Vanishing Textual Stimuli on Memorization, Journal of Educational Research, ix. (1968), PP. 297.

Mc Geoch, J.A., and Irion, A.L. (1952). The Psychology of Human Learning. New York. Macmillan Company.

Mcleish, J. (1968). The Lecture Method. Cambridge Institute of Education. Great Britain.

Murray, D.J. and Roberts, B. Visual and Auditory Presentation, Presentation Rate, and Short-Term Memory in Children, Journal of Educational Research. ix (may, 1968), PP. 296.

Novak, J.D. (1965). A Model for The Interpretation and Analysis of Concept Formation. Romey 122-139.

Pella, M.O.(1966) .Concept Learning Inscience Romey 114-124.

Postman, L. and Rau L. (1957). Retention as A Function of Measurement. Californian Publication in Psychology,. Vol 8, No 3 217-270.

Radford, J., and Rose D. (1931). The Teaching of Psychology METHOD, CONTENT, AND CONTEXT. Goldsmiths' College, University of London.

Romey, W. D., (Editor), (1968). Inquiry Techniques for Teaching Scince. Prentice Hall, Englewood Cliffs.

Russell, B.(1921). The Analysis of Mind. New York. The Macmillan Company.

Samuels, S. J. Antinational Processes in Reading: The Effect of Pictures on The Acquisition of Reading Responses," Journal of Educational Psychology. Vlll

(December, 1967), PP. 337-342.

Smith, M. D. (1978). Educational Psychology and its Classroom Application, Allynand Bacon, Boston.

Stilling, N.A. (1987). Cognitive Science: An Introduction. Cambridge: MIT Press.

Thalberg, S. P. Reading Rate and Immediate Versus Delayed Retention. Journal of Educational Psychology. Vol. 8, (December, 1967) PP. 373-378.

Trenaman, J. (1951). The Length of A Talk. London.

White, G. M. and Rosenthal, T. L.Demonstration and Lecture in Information Transmission. A field Experiment, The Journal of Experimental Education, Vol. 43, No. 2, Winter 1974, PP. 90-96.

William E. and Wolf G. J. (1966). Developing Critical Reading Abilities." Journal of Reading Vol. 10, 192-198.

APPENDICES

1. **Appendix I**. Pre-test (21 items)
2. **Appendix II**. Table of speciation
3. **Appendix III**. Post-test (41 items)
4. **Appendix IV. (A)** Attitude scales toward Methods of teaching *(reading)* 16 items
5. **Appendix IV. (B)** Attitude scales toward Methods of teaching *(lecture)* 16 items
6. **Appendix V.** Result of students' Attitude toward Method of teaching.
7. **Appendix VI**. Memory skills test I and II. (7 items)
8. **Appendix VII**. (a) Result of Study skill follow-up checklist. (9 items) with students' behavioral task (reading module)
9. **Appendix VII**. (b) Result of Study skill follow-up checklist. (9 items) with students' behavioral task (lecture)
10. **Appendix VIII**. Experimental plan (lessons for control and Experimental groups). (11-Lessons)
11. **Appendix IX**. Reading module (11- Lessons)
12. **Appendix X (A)** Activities result for *reading* group of ten students
13. **Appendix XI (B)** Activities result for *lecture* group of ten students

APPENDICES

1. **Appendix I**. Pre-test (21 items)
2. **Appendix II**. Table of speciation
3. **Appendix III**. Post-test (41 items)
4. **Appendix IV. (A)** Attitude scales toward Methods of teaching *(reading)* 16 items
5. **Appendix IV. (B)** Attitude scales toward Methods of teaching *(lecture)* 16 items
6. **Appendix V.** Result of students' Attitude toward Method of teaching.
7. **Appendix VI**. Memory skills test I and II. (7 items)
8. **Appendix VII**. (a) Result of Study skill follow-up checklist. (9 items) with students' behavioral task (reading module)
9. **Appendix VII**. (b) Result of Study skill follow-up checklist. (9 items) with students' behavioral task (lecture)
10. **Appendix VIII**. Experimental plan (lessons for control and Experimental groups). (11-Lessons)
11. **Appendix IX**. Reading module (11- Lessons)
12. **Appendix X (A)** Activities result for *reading* group of ten students
13. **Appendix XI (B)** Activities result for *lecture* group of ten students

1. Appendix No I

Addis Ababa University
School of Graduate studies

Africa Baza college Addis Ababa and Shasemene Campuses Pre-Test on the topic of memory (Remembering and Forgetting)

Directions: Choose the best answer and write the letter of your choice on the space provided

_____ 1. An act of knowing or thinking about what is actually taking place in what we do particularly and in our environment generally is

a. Cognition
b. Reinforcement
c. Punishment
d. Sensation

_____ 2. The sensory register (the sensory memory) in information processing system

a. Stores information for use in the future
b. Stores information till it is attended by short –term memory
c. Stores information for a long period of time
d. Changes information to verbal from involving a name coding

_____ 3. The duration of short –term memory can be increased by

a. Rehearsing the information
b. Disordering information
c. Loosing attention
d. Disorganizing information

_____ 4. In which of the following parts of the information processing system storage of information is relatively longer?

a. Short – term memory
b. Sensory register
c. Long term memory
d. Sensory memory

_____ 5. The correct order in the process of storage of information is

a. Retrieving → Perception → storage → Encoding

b. Perception → Encoding → storage → Retrieving

c. Encoding → Perception → storage → Retrieving

d. Storage → Encoding → perception → Retrieving

_____ 6. One of the factors that cause forgetting is

a. Interference b. Rehearsal

c. Encoding d. Classification

_____ 7. Some times old information may dominate the exercising of new information. This phenomenon is called

a. Motivated forgetting

b. Pro – active interference

c. Retroactive interference

d. Retrieving failure

_____ 8. Which of the followings satisfy the definition memory?

a. Memory is present experience

b. Memory is the warehouse of past life events

c. Memory is the sum total of past sensation, perception and experience

d. B and C above

e. All of the above

_____ 9. Which of the following is the correct order of information processing?

a. Short – term memory – sensory memory – long term memory

b. Sensory memory – short term memory – long term memory

c. Long term memory – sensory memory – short term memory

d. Sensory memory – long-term memory – short term memory

_____ 10. Which of the followings is the first phase in memory formation?

a. Acquisition

b. Storage

c. Repetition

d. Rehearsal

_____ 11. Pick out the correct statement.

a. Repetition alone is sufficient in order for learning to take place.
b. Repetition with out brake improve memorization
c. Repetition with brake is more likely improve memorization
d. All of the above

_____ 12. Failure to recall an experience when attempting an activity previously learned is

a. Retention
b. Forgetting
c. Remembering
d. Rehearsal

_____ 13. Which of the following is the true about forgetting?

a. Forgetting is entirely disadvantageous
b. Forgetting is a problem if the person can not forget what he should forget
c. Forgetting is a problem if a person forget what he should not forget
d. All of the above
e. B and C above

_____ 14. The arrangement of the material to be remembered into meaningful forms is

a. Retrieval
b. Organization
c. Acquisition
d. Repetition

_____ 15. Retrieval cures are:

a. Bring about conscious recall of a fact a fact
b. Instigated by some stimulus
c. Provide information. which interact with information
d. All of the above

_____ 16. Semantic memory:

a. Represents a person's knowledge of the world
b. Makes possible remembering of past events
c. Lies in thoughts more than behaviors

2. Appendix II.

Addis Ababa University
School of Graduate studies

Table of Specification

No	Major contents area	Objectives						
		Knowledge	Comprehension	Analysis	Synthesis	Application	Evaluation	Total
1	Nature of human memory	3	2	-	-	-	-	5
2	The phases of memory formation	3	3	-	-	2	-	8
3	The significance of forgetting	4	3	2	1	2	1	12
4	Causes of forgetting	5	3	-	-	-	-	8
5	Theories of remembering & forgetting	3	2	-	-	2		7
	Total	**18 (45%)**	**13 (32.5%)**	**2 (5%)**	**1 (2.5%)**	**6 (12.5%)**	**1 (2.5%)**	**41 (100%)**

Post-test blue print, which is corrected out of 41

3. Appendix III.

Addis Ababa University
School of Graduate studies

Africa Baza college Addis Ababa and Shashemene Campus Post-Test on the topic of memory(Remembering and Forgetting)

Directions: Choose the best answer and write the letter of your choice on the space provided

_____ 1. An act of knowing or thinking about what is actually taking place in what we do particularly and in our environment generally is

a. Cognition
b. Reinforcement
c. Punishment
d. Sensation

_____ 2. The sensory register (the sensory memory) in information processing system

a. Stores information for use in the future
b. Stores information till it is attended by short –term memory
c. Stores information for a long period of time
d. Changes information to verbal from involving a name coding

_____ 3. The duration of short –term memory can be increased by

a. Rehearsing the information
b. Disordering information
c. Loosing attention
d. Disorganizing information

_____ 4. In which of the following parts of the information processing system storage of information is relatively longer?

a. Short – term memory
b. Sensory register
c. Long term memory
d. Sensory memory

_____ 5. The correct order in the process of storage of information is

a. Retrieving → Perception → storage → Encoding

b. Perception → Encoding → storage → Retrieving

c. Encoding → Perception → storage → Retrieving

d. Storage → Encoding → perception → Retrieving

_____ 6. One of the factors that cause forgetting is

a. Interference b. Rehearsal

c. Encoding d. Classification

_____ 7. Some times old information may dominate the exercising of new information. This phenomenon is called

a. Motivated forgetting

b. Pro – active interference

c. Retroactive interference

d. Retrieving failure

_____ 8. Which of the followings satisfy the definition memory?

a. Memory is present experience

b. Memory is the warehouse of past life events

c. Memory is the sum total of past sensation, perception and experience

d. B and C above

e. All of the above

_____ 9. Which of the following is the correct order of information processing?

a. Short – term memory - sensory memory -- long term memory

b. Sensory memory – short term memory – long term memory

c. Long term memory – sensory memory – short term memory

d. Sensory memory – long-term memory – short term memory

_____ 10. Which of the followings is the first phase in memory formation?

a. Acquisition

b. Storage

c. Repetition

d. Rehearsal

_____ 11. Pick out the correct statement.

a. Repetition alone is sufficient in order for learning to take place.
b. Repetition with out brake improve memorization
c. Repetition with brake is more likely improve memorization
d. All of the above

_____ 12. Failure to recall an experience when attempting an activity previously learned is

a. Retention
b. Forgetting
c. Remembering
d. Rehearsal

_____ 13. Which of the following is the true about forgetting?

a. Forgetting is entirely disadvantageous
b. Forgetting is a problem if the person can not forget what he should forget
c. Forgetting is a problem if a person forget what he should not forget
d. All of the above
e. B and C above

_____ 14. The arrangement of the material to be remembered into meaningful forms is

a. Retrieval
b. Organization
c. Acquisition
d. Repetition

_____ 15. Retrieval cures are:

a. Bring about conscious recall of a fact a fact
b. Instigated by some stimulus
c. Provide information. which interact with information
d. All of the above

_____ 16. Semantic memory:

a. Represents a person's knowledge of the world
b. Makes possible remembering of past events
c. Lies in thoughts more than behaviors

d. A and C are correct answers

e. All of the above

_____ 17. Which of the followings is the third process of memory formation?

a. Retrieval

b. Storage

c. Acquisition

d. None of them

_____ 18. The kind of forgetting happened due to brain disease (Alzamier) is called

a. Semantic

b. Amnesia

c. Procedural

d. Episodic

_____ 19. Retrieval failure is

a. The subject of information processing theory

b. Underline that information is lost from the memory

c. Indicate that information is not lost but the problem is that we can not recall

d. A and C are correct

e. All are correct

_____ 20. Storage failure theory indicated that

a. Forgetting occurs because of lack of proper organization of the learned material

b. If proper time is not given for newly formed memory for consolidation, it will be wiled out

c. Forgetting happens due to storage failure

d. A and B are correct answers

e. All of the above

_____ 21. Forgetting is

a. Due to storage failure
b. Due to retrieval failure
c. Due to organizational failure
d. Due to disuse
e. All of the above

Directions: write "true" for correct statements and "false" for incorrect statements on the space provided.

_____ 1. Long-term memory is our working memory.

_____ 2. Interference is said to occur when past learning facilitates present learning.

_____ 3. The process of learning and forgetting go together.

_____ 4. Proactive interference refers to they reduction in the retention of tasks due to subsequent learning.

_____ 5. Retrieval failure is not because of the loss of information, but because of the problem of recalling or recognizing.

_____ 6. Immediate recall is worse for items in the middle of a list than for those at the beginning and end of the list

_____ 7. Completed tasks and satisfied needs are more likely to be forgotten less rapidly than uncompleted tasks and unsatisfied needs.

_____8. If the student take 12 trial to learn at initial time and take 8 trial to master the same material after 4 days, his saving score would be:-

_____ 9. Procedural memory involves observable behavior skill, or action rater than thought.

_____ 10. The effects of repetition are usually greater when repetitions are massed rather than spaced.

Matching

A	B
_____ 1. Trace dependent forgetting	A. Inability to recall something we could recall before
_____ 2. Qualitative loss of information	B. Failure to gain access to stored information due to interference
_____ 3. Quantitative loss of information	C. Due to change in the information stored to be remembered fact
_____ 4. Cue-dependent forgetting	D. Occurrence of forgetting as a result of passage of time

_____ 5. Forgetting in long-term memory

_____ 6. Decay theory

_____ 7. Memory disuse theory

_____ 8. State dependent memory

_____ 9. Serial position effect

_____ 10. Memory techniques

E. Recalling differently form what we recalled before

F. Due to change in encoded form of retrieval hint

G. Forgetting as a result of failure to use

H. Recall information encoded in a Particular mood

I. Using catchwords

J. differential forgetting

K. Over learned material

Give short answer

1. Evaluate the significance of forgetting

_____

4. Appendix No IV (A).

Addis Ababa University
School of Graduate studies
Attitude Scale towards methods of teaching

(Reading Module)

Instruction: Each of statement below expresses an attitude towards teaching methods (Reading Module). please put a mark with a tick (√) what your opinion is with respect to each statement in only one of the five alternatives i.e.

5 (Strongly agree), 4(agree), 3(uncertain). 2(disagree), 1(Strongly disagree).

No	Items	5 Strongly agree	4 Agree	3 Uncertain	2 Disagree	1 Strongly agree
1	I have like reading module method of learning psychological concept.					
2	I have to work assignment with reading method.					
3	In general I have a positive attitude towards reading module method.					
4	I enjoyed dealing with the reading module method of teaching.					
5	I have a feeling of like dealing with reading module method of teaching.					
6	I have problems in communication with colleagues during the reading module method.					
7	The reading module session is threatening.					
8	The reading module Session is stressful.					
9	In general I have a negative attitude towards reading module method of teaching.					
10	I continuously show willing to attend psychology class through reading module method.					
11	Active participation (appreciation) in psychology tutorial class through reading method.					
12	I often get moody or depressed and then I am not able to follow during the reading module.					
13	When I am reading module, I have trouble deciding what to write down as a note for later study.					
14	I have miss a point when reading module while I am writing down earlier point.					
15	I often get sleep when I me reading module for long periods of time.					
16	I do not know how to organize the notes of reading module so we are often hard to					

5. Appendix No IV (B).

Addis Ababa University

School of Graduate studies

Attitude Scale towards methods of teaching

(Lecture)

Instruction: Each of statement below expresses an attitude towards teaching methods (Lecture). please put a mark with a tick (√) what your opinion is with respect to each statement from only one of the five alternatives i.e.

5(Strongly agree), 4(agree), 3(uncertain), 2(disagree), 1(Strongly disagree).

No	Items	5 Strongly agree	4 Agree	3 Uncertain	2 Disagree	1 Strongly agree
1	I have like lecture method of learning psychological concept.					
2	I have to work assignment with lecture method.					
3	In general I have a positive attitude towards lecture method.					
4	I enjoyed dealing with the lecture method of teaching.					
5	I have a feeling of like dealing with lecture method of teaching.					
6	I have problems in communication with colleagues during the lecture method.					
7	The lecture session is threatening.					
8	The lecture Session is very stressful.					
9	In general I have a negative attitude towards lecture method of teaching.					
10	I continuously show willing to attend psychology class through lecture method.					
11	Active participation (appreciation) in psychology class through lecture method.					
12	I often get moody or depressed and then I am not able to follow during the lecture.					
13	When I attend the classroom of lecture, I have trouble deciding what to write down as a note for study later.					
14	I have miss a point the teacher is making while I am writing down a earlier point.					
15	I often get sleep when the teacher talks for long periods in lecture time.					
16	I do not know how to organize the notes so we are often hard to understand later.					

6. Appendix No V.

Addis Ababa University
School of Graduate studies

Result of Students' attitude toward methods of teaching.

No	Lecture group (N, 57)						Reading group (N,70)					
	5 Strongly agree	4 agree	3 uncertain	2 disagree	1 Strongly disagree	No response	5 Strongly agree	4 agree	3 uncertain	2 disagree	1 Strongly disagree	No response
1	10	6	7	11	13	10	22	15	15	10	8	0
2	20	10	10	10	1	6	30	15	10	10	5	0
3	15	8	4	13	12	5	20	15	15	10	10	0
4	16	15	8	8	5	5	28	11	10	13	8	0
5	10	2	9	2	30	4	12	25	13	12	4	4
6	18	1	0	10	22	6	15	12	10	12	12	9
7	26	14	10	7	0	0	16	11	14	28	1	0
8	32	12	6	7	0	0	16	14	10	27	3	0
9	22	8	6	10	11	0	13	10	10	14	25	3
10	12	10	10	15	10	0	28	12	11	10	9	0
11	30	10	10	5	2	0	25	17	8	10	5	5
12	37	7	3	0	5	5	10	17	11	15	13	2
13	26	12	10	4	5	0	10	13	10	24	10	3
14	30	17	8	2	0	0	15	15	10	25	5	0
15	15	15	10	10	7	-	12	15	15	12	16	0
16	20	5	5	7	20	0	25	10	10	5	15	5

7. Appendix No VI

Addis Ababa University
School of Graduate studies

Memory Skill test I and II.

Memory Skill Questions test one (presented orally)

A. **Direction**: Try to remember by using memory skills and write down on your answer paper after listening the following terms.

1. Sensory registered (SR)
2. Short term memory (STM)
3. Long term memory (LTM)
4. Serial position Effect (SPE)
5. Memory cue dependency (MCD)

Memory Skill Questions test two (presented orally)

B. After carefully listening the following sentence with massed reputation (four times) write your answer on the answer paper (hint: Use your memory skills).

2. **English is born in England,**
   Well spoken in America,
   Sick in India,
   And died in Africa.

C. After carefully listening the following sentence with interrupted repetition (four times) please, write your answer on the answer paper (hint: Use your memory skills).

3. **Memory is the warehouse**
   of information
   that is retrieved
   for the use of processing.

9. Appendix VII (a):

Addis Ababa University
School of Graduate studies

(reading group)

Result of study skill follow up checklist (9 items) with students' behavioural task

No	Items	1st Week		2nd Week		3rd Week		4th Week		5th Week		6th Week		7th Week		8th Week		Average mean	Average Mean
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1	Readiness	5	5	5	5	5	5	5	5	8	2	8	2	8	2	10	-	0.68	.32
2	Listen attentively		4	6	4	8	2	8	2	8	2	8	2	8	2	8	2	0.75	.25
3	Follow directions	8	2	10	-	10	-	10	-	10	-	10	-	10	-	10	-	0.96	.04
4	Completes work on time	6	4	8	2	8	2	7	3	7	3	8	2	8	2	8	2	0.85	.15
5	Maintains orderliness	5	5	5	5	5	5	5	5	8	2	8	2	8	2	8	2	0.85	.15
6	'Organized thinking'**	.72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72%	-
7	Knows aim of lessons	8	2	8	2	10	-	10	-	10	-	10	-	10	-	10	-	0.95	.05
8	Work independently	8	2	8	2	8	2	8	2	10	-	10	-	10	-	10	-	0.90	.10
9	Class attendance*	80%	20%	100 %	-	100 %	-	100 %	-	100 %	-	100 %	-	100 %	-	100 %	-	98%	2%

*Attendance:'yes' stand for *PRESENT* and 'no' for *ABSENT*

**Scale result: (3,3,3,4,4,4,3.5,3.5,4,4)of 10 subjects out of the total 50 .

8. Appendix No VII (b):

Addis Ababa University
School of Graduate studies

Result of study skill follow up checklist (9 items) with students' behavioral task

Mean average of students task with observation for ten subjects.

(lecture group)

No	Items	1st Week		2nd Week		3rd Week		4th Week		Average Mean	Average mean
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1	Readiness	4	4	8	2	10	-	10	-	0.83	0.17
2	Listen attentively	5	5	8	2	10	-	10	-	0.83	0.17
3	Follow directions	8	2	8	2	8	2	8	2	0.80	0.20
4	Completes work on time	3	7	3	7	5	5	8	2	0.48	0.52
5	Maintains orderliness	8	2	9	1	9	1	10	-	0.90	0.10
6	'Organized thinking'**	0.66	-	-	-	-	-	-	-	66%	-
7	Knows the aim of lesson	5	5	5	5	8	2	8	2	0.65	0.35
8	Work independently	4	6	5	5	6	4	6	4	0.53	0.47
9	Class attendance*	80%	20%	100%	-	100%	-	100%	-	95%	5%

**Scale result: (2.5,3,3,4,4,2.5,3,3,4,4)of 10 subjects out of the total 50 .
*Attendance:'yes' stand for *PRESENT* and 'no' for *ABSENT*

Appendix VIII:

Addis Ababa University

School of Graduate studies

Experimental plan

I. General design of the course

1.1 Main topic: Memory (Remembering and forgetting)

1.2 **Objectives:**

At the end of the lessen the students will be able to:

a. Bring behavioral change with respect to memory use in applying to their actual study skills. (Behavioral skills)

b. Appreciate the importance of building memory or develop positive attitude to wards the strategies of memories. (Affective)

c. Understand or know the nature and use of memory (cognitive)

1.3 Contents

Week One 1. Nature of memory (three Lessons)

1.1 Introductions to the concept of memory (Lesson 1, Period 1)

1.2 Meaning of memory ..... (Lesson 1, Period 1)

1.3 Types of memory ..... (Lesson 1, Period 1)

1.4 Phases of memory formation ..... (Lesson 2, period 1)

- Memory as acquisition and storage of information
- Memory as retrieval of stored information

1.5 The significance of forgetting, factors affecting memory (cause of forgetting) .....(lesson 3, period 1)

Week two & three 2. **Theories of memory and forgetting** .....(five lessons)

2.1 Physiological theories .....(Lesson 4, Period 1)

- Decay theory
- Memory Disuse theory

2.2 Interference theory .....(Lesson 5, period 1)

2.3 Information processing theories .....(Lessons 6, period 1)

- Storage failure
- Retrieval failure theory
- Cue – dependence theory

2.4 Serial - position effect .....(Lesson 7, period 1)

2.5 Motivational theories .....(lesson 8, period 1)

Week four 3. **Integration and implication** (five lessons)

3.1 General implication of theories of memory ...(lesson 9&10 Period 1)

3.2 Summary of memory .....(Lesson 11, period 1)

3.3 Assessment (Final Exam: Post-test, checklist, observation, attitudinal scale and focus group discussion).

1.3 Modes of Delivery and Duration.

The researcher used two teaching methods, i.e. lecture and reading module methods. The lecture method of study is conducted on Africa Beza College Addis Ababa Campus second year regular Accounting students who are currently taking General Psychology as a course requirement.

The second method, reading module, which is given as an experimental study, is provided for students of Africa Beza College Shashemene Campus. They are second year regular accounting students, who are currently taking General Psychology as a course requirement, for the control group. Since the control and experimental groups are founding in different campus and also the course is one of the requirements, we control the "Hawthorne effect" which misleading the result of the experiments. For those who study with lecture method, the researcher prepared a lecture note which is equivalent to the reading module in terms of its content. The note is adapted form the reading module. With regard to reading modules, the researcher used the modules, which has been prepared by Dr. Belay Tefera, thesis adviser, for distance learners with his permission. The researcher used with certain revisions to make comments on the experiment. The purpose to compare the effectiveness of reading modules of the lectur method in lin with the students memory.

The researcher as the teaching staff and coordinator of distance learning in Africa Beza College will benefit from the finding of the study. In addition, other institution, which is launching these kinds of program, will also benefit from the study. It also contributes how reading or lecture methods of teaching affect on memory. In general the study can serve as a stepping-stone for further study.

1.5 Time frame: See The Time Allotted with Contents.

1.6 Procedures and Instrument

The instrument of the experiment will be used for the measurement tools of the behavioral skills, cognitive and affective domain. These tools are pre-test and post-test. In addition to use pre-test and post-test, students first semester CGPA will be used to check if there is a significant difference in their academic achievement between the two groups. The researcher also used the attitude scales and skill checklist was employed to see the difference between two methods in terms of the affective and psychomotor domain. To effect this, the researcher had been prepared and use checklist and focus group discussion and observation as a means of measurement tools to see the difference in retention power among the two methods.

1.7 Evaluation Procedures.

a. Assignment and continuous evaluation for both groups of the experiment. This refers to activities given once in a week and corrected and returned to the students.
b. Pre-test for the both experimental and control groups. (Once at the start)
c. Scales of evaluation for affective and behavioral skill on the methods of teaching once at the middle of the experiment. The scale was adopted from the Addis Ababa University instructor performance evaluation format.
d. By way of observation, filling the checklist for behavioral skills on the learning of lesson, at the end of the class and tutorial class (Once in a week).

e. Post-test as final exam for both experimental groups of the study. (Once at the end of the experiment) which was prepared by the researcher after teaching the subjects for one to two months through lecture versus reading module respectively

f. Conduct focus group discussion (FGD) at the end of the lesson. In addition to that collect the subjects suggestion and opinion about the methods of teaching.

Example

1. What knowledge did you achieved from our lesson so far?
2. What did you feel about our lesson so far?
3. How do you think our lesson so far is going to affect your learning (study) behavior?

g. Use attendance list daily during the experiment for both groups

- Encourage the student to attended all the lessons(not be absent).

h. At the end of four to eight weeks, the researcher will give summative evaluation to the reading group, which is exactly the same to that of lecture group. As far as the control group is concerned, they were taken from Addis Ababa campus and the experimental group is from shashemene campus. The researcher believes that the confidentiality of the examination and independent on their experiment is very high.

The researcher also finalized the result of the gathered data through checklist scale on the attitude and behavioral skill development while the students were on learning. In addition to this the focus group discussion at the end of the experiment will be conducted.

1.8: Assessing the effectiveness-learning plan a self-check list learning goals are the goals:

- Clearly Stated?
- Appreciate and realistic for the learner's experience and stage of development?
- Comprehensive (i.e. include goals from the cognitive, affective, and psychomotor domains)?

- Worth while (are they relevant, do they include complex, difficulty to describe outcomes)?
- Regards as evolving and modifiable?

Learning strategies will the :

- Learning strategies support and be consistent with the learning goals?
- Learners have adequate opportunities to watch the researcher other than class or tutorial ? (Availability of the researcher to the subjects)
- Learners have adequate opportunities for systematically practicing what they need to learn?(It refers to the Activities to do)
- Learner makes full use of available resources?
- Learner has sufficient time for booth input and reflection.

Strategies for monitoring the learner's progress are there provisions for:

- Gathering information about the learner's relevant entry-level capabilities?
- The researcher to routinely observe the learner's performance?
- Gathering information from others who are in a position to provide helpful feed back (e.g. other teachers, peers)?
- Quickly giving the learner information gathered from others?
- Adequate opportunities for the learner to critique his or her performance and progress? (FGD)
- Adequate opportunities for the researcher to give feedback to the learner?

Others:

- The learner role and responsibilities clearly spelled out?
- The researcher roles and responsibilities clearly spelled out?
- Are the ground rules for the ways the learner and the researcher will work together spelled out?

II. The specific course Design

Method: lecture

1. Lesson one: Nature memory

2. Subtopics:

   a. Introduction to the concept of memory
   b. Meaning of memory retention
   c. Types of memory

3. Duration: 3 contact hours
4. Week: 1st Week
5 Year /date: 1st Feb, 2004
5. Specific objectives:

At the end of the lesson, the students should be able to:

- Define the term of memory
- Explain the concept of memory (cognitive)
- Describe types of memory (cognitive)
- Develop behavioral implication of memory to actual (skill).
- Examine the strength of memory they have.
- Appreciates how types of memories are helpful in study habits (affective)

7. Mode of delivery

1. Introduction

The instructor will give some examples, which are related to their daily life. Like: intelligent life does not exist with out memory. Asking probing question, such as why is intelligent life impossible with out memory? Indicating how dose memory enables as to adapt to situations by letting us call on skills and information gained from our relevant past experience?

2. Presentation

The instructor will deliver the designed course of study one after the other. For example, explain the concept of memory, define the tem of memory, the nature of human memory,

types of memory such as sensory, short-tem, long -term memory. In the midst of the lesson, oral question will be asked. For example, do you understand? Have you got the idea? Etc.

3. Teaching Method:

- Use lecture method of teaching
- Write some important points on chalkboard while explaing

4. Summary /conclusion/

Highlight some important issues the term memory as the total of past sensation, perception, learning, experience or knowledge. Memory is simple the warehouse of the past life events. Varieties of memory (Sensory, short-term, and long-term memory), kinds of long-term memory (implicit, episodic and semantic memory).

5. Evaluation

- Oral question in the midst of the lesson
- Continuous assessment (Activity one)
- Provide the assignment and activities with its feed back
- By way of observation, filling check list (skill & attitude)
- Daily attendance

2. Lesson 2: Components (phase) of Memory

2. Sub-topics:

- A phase of memory formation (components of memory)
- Memory as an acquisition and storage of information
- Effects of Repetition (Rehearsal)
- Effects of organization
- Memory as retrieval stored information
- Retrieval cues

3. **Duration** - 3 contact hours
4. **Week:** 1st week

5. **Year /date** – 3rd Feb 2004
6. **Specific objectives:**

At the end of the lesson the students should be able to:

- Write the three phases of memory formation (cognitive)
- List factors affecting memory formation (cognitive)
- Value the behaviors of practice of rehearsal in memory formation in their life and used for study habit (affective)
- Practice repetition or rehearsal for memory formation as used a study skill.

7. Mode of delivery

1. Introductio

By way of introduction, the instructor will give short revision on the past studies on the term memory, and types of memory. Like sensory, short-term and long-term memory. Some probing questions will be asked such as, do have any problems regarding to the previous topic? And then move to the new lesson.

2. Presentation

The instructor, by lecture method, will deliver the following points one after the other. Memory has phases such as acquisition, storage and retrieval. The effects of repetition on memory storage, and mechanisms to information retrieval, etc.

3. Teaching methods (material)

- Use lecture method of teaching
- Use chalk board and chalk
- Writing some important points on the board while explaining

4. Summary (conclusion)

Highlight the lesson by providing the following points

- Memory is the process by which information is acquired, stored and later retrieved.
- The effects of operation are usually grater when repetitions are spaced than massed.
- Remembering is conscious experiment that compares the successful match of the mechanisms of retrieval (the information stored about what you are trying to retrieve and relevant retrieval information)

- Performing task over and over again brings about an improvement in performance. In fact, performance is also necessary in order for learning and memory to occur.

5. **Evaluation**
   - Oral question in the midst of the lesson
   - Continuous assessment (Activity two) and with its feed back
   - Filling the attitude scale.
   - Daily attendance

3. Lesson 3 : Significance and causes of forgetting)

2. **Sub-topic**
   a. Meaning of retention
   b. The significance of forgetting
   c. Factors affecting memory (cause of forgetting)
3. **Duration** : 3 contact hours
4. **Week:** 1st week
5. **Year /date:** 5th Feb 2004
6. **Specific objectives**

At the end of the lesson, the students are expected to:

- List the significance of forgetting (cognitive)
- Describe the factors affecting memory (cognitive)
- Value how far forgetting is important the bad experience (Affective)
- Develop a skill of retention in their study habit (skill)

7. Modes of delivery

1. Introduction

The instructor will give an introduction by briefing the last lesson summary for five minutes, then will pas to the new topic ie. The significance of forgetting. Will start the new topic by asking, do you think that forgetting is bad all the time?

2. Presentation

The instructor will provide the lesson, which is organized to be given for three consecutive contact hours one after the other. This is the significance of forgetting and factors affecting memory. In the midst of the lesson, oral question will be asked. For example, do you understand the ideas?

3. Teaching method (material)
   - Lecture Method
   - Chalk board and chalk
   - Writing important points on the black board.

4. Summary (conclusion)

At the end of the lesson, the instructor will summarize the lesson by highlighting the following points, like forgetting is not entirely a disadvantage. There are instances where by many considers forgetting as a necessary evil. Theories of forgetting address causes of forgetting.

5. Evaluation
   - Oral question in the midst of the lesson
   - Assignment and with feedback (Activity three)
   - Daily attendance

4. Lesson 4: Theories of memory and forgetting

2. Sub-topics;
   a. Physiological theories
      - Decay theory
      - Memory disuse theory
3. **Duration:** 3 Contact hours
4. **Week:** 2nd week
5. **Year /date:** 7th Feb, 2004
6. **Specific objectives:**

At the end of the lesson, the student will be able to:

- Compare and contrast the various theories (Decay & Disuse) of memory and forgetting (cognitive)
- Develop skill how to improve memory in their study skills.
- Appreciate why do people differ in the rate to forgetting and retention. (Affective)

7. Modes of delivery

1. Introduction

The instructor will revise, the last lesson for a short time that will lead to the new topic of physiological theories of memory and forgetting. Asking probing questions, which are attached to their daily life, particularly with reference to, why do they forget information?

2. Presentation

The lesson will be delivered in accordance with their order in the list of physiological theories. The instructor compares and contracts each of the two physiological theories such as Decay and memory disuse theories.

3. Teaching method (materials)

- Lecture method of presentation
- Chalk and chalk board
- Writing some important points on the board

4. Summary (conclusion)

Give short summary physiological theories such as decay and memory disuse theory.

5. Lesson 5: Theory of memory and forgetting

2. **Sub topics:**

   b. Interference theory

   - Designs of minimal proaction and retroaction experiment

3. **Duration**: 3 contact hours
4. **Week:** 2nd week
5. **Year /date:** 9th Feb 2004
6. **Specific objectives:**

At the end of the lesson, the students will be able to:

- Compare and contrast with the pervious physiological theories of memory and forgetting (cognitive)
- Develop skill how to improve memory in their study skills (skills)
- Appreciate why do people differ in the rate to forgetting and retention. (Affection)

7. Modes of delivery

1. Introduction

The instructor will give short revision on the past lesson of physiological theories and. start the new topic of interference theory.

2. Presentation

The instructor will deliver the following points one after the other. Such as, the impaired irretrievability may involve both availability and accessibility of the target information. We need to distinguish between two kinds of interference (Procation and Retroaction).

3. Teaching method (material)

- Lecture method of teaching
- Chalk and Chalk board
- Writing some points on the chalk board

4. Summary (conclusion)

High light the lesson by providing the following points

- There are two kinds of interference: Proactive inference and retraction interference both of which play a role in forgetting.

5. Evaluation

- Oral question in the midst of the lesson
- Assignment (Activity)
- By way of observation, filling the check list
- Daily attendance

6. Lesson 6: Theory of memory and forgetting

2. **Sub-topics**

   C. Information processing theory

   - Storage failure theory
   - Retrieval failure theory
   - Cue – Dependence theory

3. **Duration** – 3 contact hours
4. **Week:** 2nd week
5. **Year /date:** 11th Feb 2004
6. **Specific objectives:**

At the end the lesson, the students will be able to:

- Compare and contrast with the previous, physiological theories, interference theory. (cognitive)
- Develop skills how to improve memory use in their study skills. (skills)
- Appreciate why do people differ in their rate to forgetting and retention. (Affection)

7. Mode of delivery

1. Introduction

The instructor will give short summary on the past lesson of about interference theory. Then start discussing the information processing theory.

2. Presentation

The instructor will deliver the following points one after the other. Forgetting as unavailability of information implies that the issue to be remembered is not well registered (encoded) because of lack of attention, or perhaps it is well registered but not well interpreted and organized or else it is well interpreted but not practices respectively. Forgetting is simply failure of encoding or decoding, or failure of storage. (Retrieval and storage failure theories)

3. **Teaching method**

   - Lecture method of teaching
   - Chalk and chalk board
   - Write some important points in chalkboard.

4. Summary (conclusion)

Highlight the lesson by providing the following points:

- Forgetting is often on account of lack of proper organization and systematization of the learned material
- Forgetting as a retrieval failure occurs because unable to get relevant retrieval cues

5. Evaluation

- Oral question in the midst of the lesson
- Assignment (Activity)
- By ways of observation, filling the checklist.
- Daily attendance

7. Lesson 7: Theory of memory and forgetting

2. **Sub-topics**

   d. **Serial** – Position effect

   - Primary effect
   - Recency effect

3. **Duration:** 3 contact hours
4. **Week:** 3rd week
5. **Year /date:** 13th Feb 2004
6. **Specific objectives:**

At the end of the lesson the students will be able to

- Compare and contrast with the previous of physiological, interference and information processing theories. (Cognitive)
- Develop skills how to improve use of memory in their study skill. (Skills)
- Appreciate the differential forgetting in serial – position effect. (Affective)

7. Modes of delivery

1. Introduction

The instructor will revise the last lesson for a short time, then pass to the new topics, that is, the serial-position effect.

2. Presentation

The lesson will be delivers in accordance with their order in the serial-position effect.

3.Teaching method: * use chalk & chalk board.

* write important point on chalk board.

4. Summary (conclusion)

Highlight the summary of the lesson such as, the immediate recall is worse for item in the middle of a list than for those at the beginning and end of a list.

4. Evaluation: * Oral question at the midst of the lesson.

* Assignment and daily attendance.

8. Lesson 8: Theory of memory and forgetting

2. Sub-topics:

e. Theories of motivated forgetting

- Psychoanalytic theory of forgetting
- Zigarnik hypothesis

3. Duration: 3 Contact hours

4. Week: 3rd week

5. Year /date: 15th Feb 2004

6. Specific objectives:

At the end of the lesson, the students will be able to:

- Compare and contrast the various theories. Such as physiological, interference, information-processing, serial-position effect and theories of motivated forgetting. (Cognitive)
- Develop skills how to improve memory in their skills. (Skills)
- Appreciate theories of motivated forgetting. (Affective)

7. Mode of Delivery

1. Introduction

The instructor will give the summary of the lesson, and then pass to the new topic called theories of motivated forgetting.

2. Presentation

The instructor will deliver the following points one after the other. There are two groups of such theories.

A. Psychoanalytic theory of forgetting – peoples tend to avoid thoughts and tend to forget particularly unpleasant. (very threatening experiences)

B. Zeigarink hypothesis: suggest that completed tasks, satisfied needs and achieved goals are likely to be forgotten more rapidly than an uncompleted tasks, unsatisfied needs and unachieved goal because former do fail to motivate individuals.

3. Teaching method (material)

- Lecture method of teaching
- Use chalk & chalk board
- Write important points on the chalk board

4. Summary (Conclusion)

Highlight the summary of the lesson such as theories under line the role motivation behind remembering and forgetting experiences.

5. Evaluation

- Oral questions in the midst of the lesson
- Assignment (Activity)
- By ways of observation, filling the check list
- Daily attendance

9. Lesson 9 &10: Integration and implication strategies of memory use.

2. Sub-topics

- Practical implication and strategies of memory use

5. Duration 3. Contact hours
6. Week: 4th week
7. Year/ date: 17th Feb, 2004
8. Specific objectives:

At the end of the lesson, the students should be able to:

- Understand the implication and strategies of human information processing system (cognitive)
- Develop skills how to implement information processing system into their study habit (skills)
- Appreciate the implication of human information processing system (Affective)

8. Mode of delivery

1. Introduction

The instructor will give the summary of the past lesson and then pass to the new topics of the general implication of theories on memory.

2. Presentation

The instructor will deliver the following points one after the other.

- The implication and strategies of human information processing system (models) memory have contains seven themes.

1. Organize the materials to be learned
2. Intending to remember
3. Testing your self repeatedly
4. Use several memory techniques
5. Space memory work over serial session
6. Over learn the material
7. Study before sleep

3. **Teaching method**
   - Lecture method of teaching
   - Use chalk and chalk board
   - Write important points on the chalk board

4. **Summary (conclusion)**

Highlight the summary of the lesson such as the implication and strategies of human information processing system (models) memory.

5. **Evaluation**
   - Oral question in the midst of the lesson
   - Assignment (Skill test I and II)
   - By ways of observation, filling the checklist
   - Daily attendance

10. Lesson 11: Summary of memory: remembering and forgetting

2. **Sub-topics**
   - Summary of the whole lessons (memory: remembering & forgetting)
3. **Duration:** 3 Contact hours
4. Week: 4th
5. Year /date: 21st Feb 2004
6. Specific objectives:

At the end of the lesson, the student should be able to:

- Describe and understand nature of memory
- Develop behavioral skills and apply memory use in actual life (study habit)
- Appreciates and develop an attitude to the nature and implication of memories helpful for their study habit.

7. Mode of delivery

1. Introduction

The instructor will give some of the summaries about the post lessons, which are related to their daily life.

2. Presentation

The instructor will deliver the summaries course of memory one after the other. In the midst of the lesson, oral question will be asked to see whether the student understand or not about the lesson they learned during the past ten lessons.

3. Teaching method (materials)

- Lecture method of teaching
- Chalk and calk method
- Writing important points on the chalk board

4. Summary (conclusion)

At this end, the instructor will summarize the lesson by highlighting the important concepts, theories nature implication and memory use which is related to their daily life to apply during the study habit.

5. Evaluation

- Oral question in the midst of the summarize lesson
- By the way of observation, filling check list
- Daily attendance
- Post test (final exam)- Summative evaluation
- Focus group discussion (FGD)
- Comment about the methods
- Finalize the result of attitude & skills Evaluation
- Any student suggestion

II. The specific course design

2.Method: Reading module

1. Lesson one: Nature of memory

2 **Subtopics:**

A. Introduction to the concept of memory

B. Meaning of memory and retention

C. Types of memory

4. **Duration:** 3 contract hours

5. **Week:** 1st week

6. **Year /date:** 1st March, 2004

7. **Specific objectives:**

At the end of the lesson, the student should be able to:

- Define the term of memory
- Explain the concept of memory
- Describe types of memory
- Develop behavioral implication of memory to actual life.
- Appreciates how types of memories are help in study habits.

8. Mode of delivery

1. Introduction

The instructor will distribute reading module among the students. The first lesson is including some of the examples of memory, which are related to their daily life. Like; intelligent life does not exist with out memory. Asking probing question. Such as why is intelligent life impossible with out memory? Indicating how memory enables as to adapt to situations by letting us call on skills and information gained from our relevant past experience?

2. Presentation

In the reading module, the instructor designed course of the study one after the other. For example, explain the concept of memory, define the term of memory, the nature of Human memory, types of memory such as sensory short-term, Long-term memory.

3. Teaching method

- Distribute reading module among students.
- Encourage independent students reading module and practice to study it.
- Allow for sufficient time to read and practice the module.
- Organizes the students into groups.
- Tutoring the activities, assignments and give feedback.

4. Summary (conclusion)

In the reading module highlight some the important issues, like the term memory as the sum total of past sensation, perception, learning, experience or knowledge. Memory is simple the warehouse of the past life events. Varieties of memory (sensory, short-term, and long-term memory), kinds of long-term memory (implicit, episodic and semantic memory).

5. Evaluation

- Written question in the midst of the lesson
- Continuous assessment (Activity)
- Provide the assignment and activities with its feedback
- By way of observation, filling checklist
- Attendance

2. Lesson 2: Component (phases) of memory

2. Subtopics:

- Phases of memory formation (components of memory)
- Memory as on acquisition and storage of information
- Effects of repetition (Rehearsal)
- Effects of organization

- Memory as retrieval stored information
- Retrieval cues

3. **Duration** - 3 contact hours
4. **Week-1st** week
5. **Year /date-3rd** March, 2004
6. **Specific objectives:**

At the end of the lesson, the students should be able to:

- Write the three phases of memory formation.
- List factors affecting memory formation.
- Value the behaviors of practice of rehearsal in memory formation in their life and used for study habit.
- Practice repetition or rehearsal for memory formation as used a study skill.

7. **Mode of delivery**

1. **Introduction:**

The instructor will provide reading module of the lesson among the students. The second lesson is including the term of memory, and types of memory, like sensory, short, short-term memory and long-term memory.

2. Presentation

The instructor provides reading module, which contains the following point one after the other. Memory has phases such as acquisition, storage and retrieval. The effects of repetition on memory storage, and mechanisms to information retrieval, etc.

3. Teaching method.

- Reading module
- Encourage independent students reading module and practice to study it.
- Tutoring the activities, assignment and give feed back.

4. Summary (conclusion)

This prepared reading module highlight the lesson by providing the following points.

- Memory is the process by which information is acquired, stored and later retrieved.
- The effects of repetition are usually greater when repetitions are spaced than massed.

- Remembering is conscious experiment that successful match of the mechanisms of retrieval. (The information stored about what you are trying to retrieve and relevant retrieval information)
- Performing a task over and over again brings about an improvement in performance. In fact, reinforcement for knowledge results of repeated performance is also necessary in order for learning and memory to occur.

5. **Evaluation**
   - Written question in the midst of the lesson.
   - Give assignment and activities with its feedback.
   - Continuous assessment. (Activity)
   - Attendance.

3. Lesson 3: Significance and causes of forgetting

2. **Sub-topics:**
   A. The significance of forgetting
   B. Factors affecting memory (causes of forgetting)
   C. Meaning of retention
3. **Duration:** - 3 contact hours.
4. **Week:-** first week
5. **Year /date:-** 5th March, 2004
6. **Specific objectives:**

At the end of the lesson, the students are expected to:

- List the significance of forgetting
- Describe the factors affecting memory
- Value how far forgetting is important the bad experience.
- Develop a skill of retention in their study habit.

7. Modes of delivery

1. Introduction

The instructor will distribute reading module of the lesson among the students.

2. Presentation

The third lesson contains the significance of forgetting and cause of forgetting. The instructor starts the new topic by asking questions like do you think forgetting and cause of forgetting then start the new topic by asking question like ,do you thick forgetting is bad all time?

3. Teaching method.

- Distribute reading module among the students
- Motivate independent students reading module
- Allow sufficient time to read and practice the module
- Tutoring the activities, assignment and give feed back

4. Summary (conclusion)

The summarized lesson is written in the highlight form like forgetting is not entirely a disadvantage. There are instances where by may consider forgetting as a necessary evil. Theories of forgetting address cause of forgetting.

5. Evaluation

- Writing question in the midst of the lesson
- Assignment and with their feed back (activity)
- Attendance

4. Lesson 4: Theories of memory and forgetting

2. **Sub topics:**
   - **A. Physiological theories**
     - Decay theory
     - Memory disuse theory
3. **Duration:** 3 contact hours
4. **Week:** First week
5. **Year /date:** 7th March 2004.
6. **To specific objectives:**

At the end of the lesson, the students will be able to:

- Compare and contrast the various (Decay & Disuse) of memory and forgetting.
- Develop skill how to improve memory in their study skills.
- Appreciate why do people differ in the rate to forgetting and retention.

7. Modes of delivery

1. Introduction.

The instructor distributes the lesson of reading module among the students on the new topic of physiological theories of memory and forgetting. Asking probing questions, which are attached to their life, particularly with reference to, why do they forget information.

2. Presentation

The lesson has been written in accordance with their order in the list of physiological theories it is written in the list of physiological theories. It written in the form of compare and contrasts each of the two physiological theories such as decay and memory disuse theories.

3. Teaching method

- Distribute reading module among the student
- Motivate the students reading the module independently.
- Tutoring the activities, assignment and then give feed back.

4. Summary (conclusion)

The important point is written in the highlight forms in order to give more attention to the students during reading the topic module.

5. Lesson 5: Theory and forgetting

2. Sub-topics:

B. Interference theory

- Designs of minimal proaction and Retroaction experiments.

3. **Duration:** 3 contact hours
4. Week: 2nd week
5. Year /date: 9th March 2004
6. Specific objectives:

At the end of the lesson, the students will be able to:

- Compare and contrast with the pervious physiological theories of memory and forgetting.
- Develop skill how to improve memory in their study skills.
- Appreciate why do people differ in the rate to forgetting and retention.

7. Modes of delivery

1. Introduction

The instructor wills distribute reading module of the lesson among the students. Thus lesson of memory is including of the inference theory.

2. Presentation

The instructor provides reading module, which contains the following points. The impaired irretrievability may involve both availability and accessibility of the target information irretrievability may involve both availability and accessibility of the target interference (proaction and reaction).

3. Teaching method

- Reading module
- Motivate students reading module independently and practice to study.
- Tutoring the activities, assignment and give feed back

4. Summary

This prepared reading module highlight the important point such as, there are two kinds of interference: proactive inference and retraction interference both of which play a rule in forgetting.

5. **Evaluation**

- Written question in the midst of the lesson.
- Assignment and activities with its feed back (activity)
- Attendance.
- By way of observation, filling the checklist.

6.Lesson 6: Theory of memory and forgetting

6 **Sub-topic**

C. Information processing theory

*Storage failure theory

*Retrieval failure theory

*Cue-dependence theory

3. **Duration** –3 contact hours
4. **Week** – 2nd week
5. **Year /date** - 11th march, 2004
6. **Specific objectives**:

At the end of the lesson, the students will be able to

- Compare and contrast the previous, physiological, interference theory.
- Develop skills how to improve memory use in their stud y skills

7. Mode of delivery

1. Introduction

The instructor will distribute reading module, which contain the lesson of topic on the information processing theory.

2. Presentation

The lesson have been written in accordance with their order in, forgetting as unavailability of information implies that the issue to be remembered is not well registered (encoded) because of lack of information, or perhaps it is well registered but not well interpreted and organized, or else it is well interpreted but not well practiced repetitively. Forgetting is simply failure of encoding or decoding, or failure of storage (retrieval and storage failure theories)

7 Teaching method (material)

- Reading module
- Motivate students reading module independently and practice to study
- Tutoring the activity, assignment and give feedback.

4. Summary

Reading module has the highlight of the important points such as; forgetting is often on account of lack of proper organization and systematization of the learned material. It is also, forgetting as a retrieval failure occurs because unable to get relevant retrieval cues.

5. Evaluation

- Written question in the midst of the lesson
- Assignment and activities with its feedback. (Activity)
- Attendance.

7. Lesson 7: Theory of memory and forgetting

2. Sub- topics:

D. Serial – position effect

- Primacy effect
- Decency effect.

3. Duration: 3 contact hours
4. Week: 3rd week
5. Year /date: 13th march, 2004
6. Specific objectives:

- Compare and contrast the pervious physiological, interference and information processing theories.
- Develop skills how to improve use of memory in their study skill.
- Appreciate the differential forgetting in serial position effect.

7. Modes of delivery

1. Introduction

The instructor will distribute reading module of the lesson among the students. This lesson includes of the topic of serial-position effect of memory.

2. Presentaion

The instructor will provide reading module, which contains the topic of serial position effect of memory. As the midst of the lesson probing questions are written, such as what account for the serial position effect?

3. Teaching method (material)

- Reading module
- Encourage the students reading module independently and practice to study
- Tutoring the activities, assignment and give feed back (activity

4. Summary

The reading module have the highlight of the important point such as, the immediate recall is worse for item in the middle of a list than those at the beginning and end of a list.

5. Evaluation

- Written question at the midst of the lesson
- Assignment, and activities with its feedback. (Activity)
- Attendance.

8. Lesson 8: theory of memory and forgetting

2. Sub-topic

E. Theories of motivated forgetting

- Psychoanalytic theory of forgetting
- Zeigarnik hypothesis

3. **Duration:** 3 contact hours
4. **Week:** 3rd week
5. **Year /date:** 15th march, 2004,

6. Specific objectives:

At the end of the lesson, the students will be able to:

- Compare and contrast the various theories. Such as physiological, interference, information processing, serial-position effect and theories of motivated forgetting.
- Develop skills how to improve memory use in their study skills.
- Appreciate theories of motivated forgetting.

7. Mode of delivery

1. Interoduction

The instruction will distribute reading module of the lesson among the students, which entitled the topic of theories of motivated forgetting.

2. Presentation

The instructor reading module, which contain the following points one after the other

a) Psychoanalytic theory of forgetting people tends to thoughts and tends to forget particularly Very threatening experiences.

b) Zeiqarnik hypothesis suggest that completed tasks, satisfied needs and achieved goals are likely to be forgotten more rapidly than an uncompleted tasks, unsatisfied needs and unachieved goal because former do fail to motivate individuals.

3. Teaching method

- Reading module
- Motivate the students reading module independently and practice to study.
- Tutoring the activities, assignment and give

8 **4 . Summary**

The reading module highlights the lesson as theories under line the role motivation behind remembering and forgetting experiences.

- Give assignment and activities with its feedback (Activity)
- Attendance.

9.Lesson: 9&10:Integration and implication strategies of memory use.

1. **Sub topics:**
   a) Practical implication and strategies of human memory use at daily life.
2. **Duration:** 3 contact hours
3. **Week:** 4th week
4. **Year /date:** 17th and march 2004
5. Specific objectives:

At the end of the lesson, the students would be able to:

- Develop behavioral implication and strategies of memory use in study habits.
- Appreciates the strategies of memory use
- List the strategies of memory use guidelines.

7. Mode of delivery

1. Introduction

The instructor will distribute reading module of the lesson among the students, which entitles the topic of practical implication and strategies of memory use.

2. Presentation:

The lesson have been written in accordance with their order, the list of 8 (Eight) memory use guideline such as:

1. Organize the materials to be learned.
2. Intending to remember
3. Testing your self repeatedly
4. Use several memory techniques
5. Space memory work over several session
6. Over learn the material
7. Study before sleep.

3. Teaching method:

- Distribute reading module among students.
- Motivate the student reading module and practice study it independently.

2. Presentation

The instructor will deliver the summaries course of memory one after the other. In the midst of the lesson, oral question will be asked to see whether the student understand or not about the lesson they learned during the past ten lessons.

3. Teaching method (materials)

- Reading Module
- Encourage the students reading module independently and practice to study
- Tutoring the activities, assignment and give feed back.

4. Summary (Conclusion)

At this end, the reading modules will summarize the lesson by highlighting the important concepts, theories nature implication and memory use which is related to their daily life and to apply during the study habit.

5. Evaluation

- Written question in the midst of the summarize lesson
- By the way of observation, filling check list
- Daily attendance
- Post test (final exam)- Summative evaluation
- Focus group discussion (FGD)
- Comment about the methods
- Finalize the result of attitude & skills Evaluation
- Any student suggestion

11. Appendix IX:

INTRODUCTION TO PSYCHOLOGY

READING MODULE

ON

MEMORY: REMEMBERING AND FORGETTING

FEBRUARY, 2004

MEMORY: REMEMBERING AND FORGETTING

Lesson - 1

Introduction

 Let us see the reasons why human beings are considered as the most intelligent creatures ever seen on this planet. You may even appreciate this quality far better if you rather consider the most complex psychological activity human beings are capable of engaging themselves in – Memory. Intelligent life does not exist without memory.

Why is intelligent life impossible without memory? Imagine what life could mean to a person who is unable to recognize things that were already seen, tested, or heard yesterday. Assume that your past knowledge, experience or awareness of a stimulus disappears immediately with the disappearance of the stimulus. This implies that your mind changes each moment. Your mind going to treat old new every moment it experiences it. In this case your past personhood is unrelated to your present personhood which in turn is unrelated to your future personhood. This is by and large the case of animals, which hardly rely on experiences thus lacking in memory.

But luckily you remain more or less with the same mind irrespective of changes in situations and time because your memory provides your consciousness with continuity situations and time because your memory provides your consciousness with a continuity of life. Moreover, your memory also enables you to adapt to situations by letting you call on skills and information gained from your relevant past experiences. Your abilities to drive a car, perform well on an exam, serve as a witness in a court etc. all depend on memory.

Your memory still enriches your emotional life. It lets you experience moments from your past, whether negative or positive.

? What is then the nature of this dimension of human's intelligent life that serves the above purposes? How is it formed in the first place? how is memory retrieved or used? How dependable is human memory?

This unit attempts to provide answers to these and other related questions. In its first and second section, it focuses on the nature of memory: meaning, kinds, types and phases of memory formation. And in the third and fourth section, it focuses on retention and loss of memory, significance of forgetting, causes of forgetting from fifth to sixth section deals with theories of forgetting, and the ninth and tenth section deal with practical implication and strategies of human memory.

❖ **1. Topics:**

1.1 The Nature of Human Memory: Meaning, Types, and Formation

Overview

This section discusses the general features of human memory: what is memory? What are the verities of memory? What are the different phases or components of memory?

❖ **Objectives**

At the end of the lesson, you will be able to:

- Comprehend the nature of memory including its meaning and types
- Explain the processes that are at work in memory formation, and
- Explain the factors underlying the persistence, and loss of memory
- Define memory.
- Distinguish sensory, short - term, and long - term memory.
- Identify the different types of long - term memory: procedural and declarative memory, semantic and episodic memory.
- Compare and contrast the different types and sub types of memory.
- Explain the three phases of memory formation: acquisition, storage, and retrieval.

1.2 The meaning and definition of memory

? By the way, why do you need to study the field you are currently registering for?

You may have different reasons for deciding to study your present field of study. But, one major issue you can't skip mentioning is that you need to get knowledge that is to be used later in the work place as professional. That is, you want to build up a memory of knowledge, skill, and experience in your field of study and use it to solve problems you are to face later in the workplace. That is why human society has created schools, colleges and Universities for its children.

In a broader sense, memory is just the sum total of your past sensation, perception, learning, experience or knowledge. It is simply the warehouse of your past life events.

This warehouse remains to serve you as a guide of your life. It is your best adviser, philosopher, teacher, friend and guard; and of course sometimes even an enemy in a negative sense, as when your bad habits limit your capacity to effectively adjust to the environment.

Memory as the sum total of an individual's past life events is as diverse as the diversity of the life experiences of an individual themselves. So, it has different forms, characteristics and manifestations. Psychologists have attempted to understand this diverse nature of memory by classifying it into types.

1.3 Varieties of memory

Some cognitive psychologists like Richard shiffrin and Richard Atkinson view human mind as an information processor. Their model assumes that memory involves the processing of information in three successive stages: ***sensory memory, short – term memory, and long – term memory.*** The sensory registers of sensory memory stores exact replicas of the stimuli that had acted on each of the senses. Sensory memories last for a

brief period – from less than 1 second (in the case of visual sensory memory) to as long as 4 second or more (in the case of auditory sensory memory). This helps to hold information long enough to attend to it for further processing.

When you attend to information in sensory memory, it is transferred to short – term memory which stores it for 20 seconds unless you enhance it through mental rehearsal as when you repeat a phone number to yourself long enough when dialing it.

Information transferred from short – term memory to long – term memory is durable – it can be stored for lifetime. You can appreciate this by stopping to recall some childhood memories. Your ability to recall memories indicates that information can also move from long –term memory into short – term memory. William James considered short – term memory and long –term memory as primary and secondary memory respectively. While short-term memory represents a stage of memory that can store a few item of un rehearsed information for up to 29 seconds, long –term memory is a stage of memory that can store unlimited amount of information relatively permanently.

According to the influential memory researcher Endel Tulving (1985), we store information in two kinds of long-term memory – **procedural memory** and **declarative memory.**

Procedural memory includes memories of how to perform a behavior. It involves observable behavior, skill or action rather than thought. It requires extensive practice and it can be expressed automatically in the absence of directed attention. Hence, it is called *implicit memory.*

Procedural memory is exemplified by the learning and execution of perceptual – motor skills such as tying a shoe lace, riding a bicycle, writing, walking, typing and so on. Simple classical conditioning and operant conditioning can be classified as instances of procedural memory.

Declarative memory, on the other hand, includes memories of facts. It is also called *explicit memory.* Endel Tulving subdivided declarative memory in to *semantic memory and episodic memory.*

In what follows we are going to discuss separately the characteristic features of these two sub divisions of declarative memory.

On reading their characteristics keep on campaign and contracting them with procedural memory.

Semantic memory represents a person's knowledge of the world. It is concerned with symbolically represent able factual knowledge. Knowing that Harar is east of Addis Ababa; that professional athletes sometimes make huge amounts of money; that bachelors are unmarried; that beauty is in the eye of the beholder; and thousands of other things of this sort are examples of the kind of knowledge with which semantic memory is concerned. The essence of semantic memory lies in thought more than behavior a person can act upon what her or she knows in many different ways. Unlike procedural memory there is no necessary connection between knowledge and behavior in semantic memory. Semantic memory information can be acquired very rapidly. It also has truth value: what a person knows may be true or fable. The over expression (retrieval) of semantic knowledge may be either autocratic (e.g., what is the color or grass?) or deliberated (e.g., which month is longer, march or September?), depending up on the characteristics of the expressed knowledge.

Episodic memory is the kind of memory that makes possible the remembering of events from one's personal past. It corresponds to what William James, in his famous principles of Psychology (1890), thought of as memory, distinguishing it from habits (procedural memory) and knowledge (semantic memory). Your recollection of what you did last Sunday, or what you did before you started reading this section are mediated by episodic memory. It is in many ways similar to semantic memory: its essence also lies in conscious thought rather than behavior, information in it can be acquired very rapidly, and it has truth-value. But it also differs from semantic memory. Unlike retrieval of semantic knowledge, remembering of past events usual requires focal attention, the remembered events are experienced by the person as personal and veridical, and they are directly felt as representing the past.

The characteristics of procedural, semantic, and episodic memory have been worked out in much greater detail than the thumbnail sketch presented here suggests, but many problems remain. One of the open problems that is vigorously debated at the present time has to do with the biological reality of the distinction between the three kinds of memory.

? Do they correspond to different brain systems or mechanisms, or do they represent only a convenient way of categorizing phenomena of learning and memory?

Although the issue has not yet been settled, some relevant evidence does exit. One kind of evidence is provided by studies of **amnesic patients.** These are people suffering from brain damage that impairs memory but leaves other intellectual functions such as perception, language, and thought relatively untouched. But the important fact is that memory impairment in amnesic patients is selective: some forms of memory are essentially lost whereas others may be little affected.

At the unit for memory disorders at the university of Toronto researchers have been studying a man, known as K.C., who become severely amnesic as a result of motorcycle accident in 1980. His episodic memory was severely impaired, his semantic memory was mildly impaired, and his procedural learning was largely intact. He did not remember a single event from his life: indeed, he did not remember anything that has ever happened to him. Even when he is given detailed reminders of certain dramatic events in his life, he said that he cannot remember them, and that when he tried to think of them his mind was "blank." Yet he had retained a good deal of knowledge about the world as well as many skills. The fact that brain damage can selectively impair the remembering of personal experiences but has little effect on the use of acquired knowledge suggests that episodic and semantic memory represent different brain systems.

Activity 1

1. Regarding the importance of human memory

   1.1 what do you think will happen to you if you are without memory of man kind?

1.2 What do you think is the importance of memory?

1.3 Do you think that animals have memory?

2. Regarding the types of memory

2.1 Classify memory using

2.2 How many types of memory do we have?

2.2.1 Time spent in memory formation

2.2.2 Types of information to we have?

2.2.3 Effort required retrieving the stored information

3. Represent in a chart of hierarchy the different types of memory discussed previously.

4. Do you think that the different types of memories have different centers in the brain? Why not?

Lesson - 2

❖ **Topics:**

2.1 The phases of Memory Formation: (Components of Memory)

❖ **Objectives:**

At the end of the lesson, you will be able to:

- Explain the three phases of memory formation: acquisition, storage, and retrieval.
- Identify factors affecting memory formation: attention, rehearsal, organization and retrieval cues.
- Valuing the behaviors of practical of rehearsal in memory formation

? How do you from the memory of events you sense? We may define memory again in the following way:

Memory is the process by which information is acquired (*Phase 1*), stored (*Phase2*), and later retrieved (*Phase 3).*

Late me elaborate this definition further

2.2 Memory as an Acquisition and storage of information

Acquisition of information is the first phase in memory formation. Storage is the second phase. ***These two phases are closely related and hence are discussed together.***

Many factors determine how you will acquire or encode any given material and what information you store about it. Some of these factors are obvious – ***repetition and organization of the material.*** Others are less known – ***effects of encoding operations, the role of comprehension, and effects of transfer of training.***

2.3 Effects of Repetition or Rehearsal: the old proverb "practice makes perfect" applies in many learning situations. Procedural knowledge or skills such as those used in riding a bicycle, speaking a language, writing a computer program, and countless other tasks are acquired through practice and repetition.

In many cases, just performing a task over and over again brings about an improvement in performance. In fact, reinforcement or knowledge of results of repeated performance are also necessary in order for learning and memory to occur

Repetition alone may not be sufficient. For instance, think of the 5 cents Ethiopian coin. You have seen and used it so many times even in a single day. But, if you are asked to describe the picture appearing on both sides of the coin, it may be impossible for you to do it. Hence poor memory for things such as a 5 cents coin has to do with, among others, the fact that you usually observe these objects only casually and perhaps not carefully. If you were therefore asked to actively attend to what you are looking at, your memory would be better.

Although, in many cases, actively attending to the material helps memory, it need not always be so. Mere exposure to and mechanical repetition of the material need not make it any easier to acquire and retain the material. Something else is also necessary ***spacing of repetitions.***

The effects of repetition are usually greater when repetitions are spaced rather than massed.

Massed repetition is a repetition that is made continuously or without brake. Spaced repetition is a repetition interrupted at different periods of making the repetition. Researchers have found out that making repetition with brake is more likely to improve

memorization because it gives chance to the person to assimilate and analyze the information bite by bite. On the other hand, massed repetition does not only make the person tired. It also fails to give chance to interpret the information one at a time. The person is going to have many information or information overload that is not well interpreted.

2.4 Effects of organization: organization is another major determinant of effective acquisition. It involves arranging the material to be remembered into meaningful forms, symbols, or ideas that simplify and facilitate remembering the material as required. For instance, if the words you are asked to memorize are presented to you in a jumbled fashion, your first step is to rearrange them into some kind of meaningful expression in your own mind.

In general, it appears that it is the mental activity of the learners how they perceive, organize, think about and "concentrate on the material to which they are exposed – that influences the "goodness" of acquisition, rather than simply exposure to the material or the intention to learn. The mental activity of learners, on the other hand, involves the kind of encoding operations used, the levels of processing made, comprehending the meaningfulness of the material and interpreting or relating the new material to existing knowledge.

2.5 Memory as Retrieval Stored Information

2.5.1 The Retrieval Process: retrieval of stored information often seems deceptively simple. Someone asks you, "What is the capital of France?" And the answer pops into your mind without any conscious effort on your part. The same is true of thousands of other questions at your memory and knowledge store. Answers to memory questions seem to come to you in the same way as that of sensory impressions from the external world come to you when you keep your eyes and ears open. You do not have to do anything special in order to retrieve stored information, just as you do not have to make any special effort to see or hear things.

? What is the mechanism of such a smooth and effortless functioning of the retrieval system?

As with many other fundamental questions, the above question has no universally accepted answer. One general idea psychologists have about retrievals is that it is like locating a lost object: you have some idea of what you are looking for and where you may search for the desired piece of knowledge or information in its probable "neighborhoods," and when you find the right thing you recognize it. Another, somewhat more abstract, idea is that retrieval entails matching two things:

- ñ The information stored about what you are trying to retrieve, and
- ñ Relevant retrieval information.

Remembering is then the conscious experience that accompanies the successful match of these two kinds of information. These and other ideas about the nature of the retrieval mechanism differ less in substance than in the language in which they are expressed. In what follow we will discuss the mechanism of retrieval in terms of the concept of matching stored information and retrieval information.

2.5.2 Retrieval Cues: the act of retrieval of stored information is always instigated by some stimulus: a perceptual input, a thought, a question. These instigating events are generally referred to retrieval information or retrieval cues. They provide information, which interacts with stored information, to bring about the conscious recall of a fact or recollection of an event. Retrieval information, like stored information, is a necessary but not sufficient condition of remembering. It is necessary in that recollection does not occur in its absence: it is not sufficient in that other conditions such as the existence of a memory trace have to be fulfilled before the event is remembered or the fact recalled.

Activity 2

1. Show with examples that memory formation is a three – step process

---

2. Effective memory formation requires attention, rehearsal, organization, and cues. Indicate at which stage each of these factors are required

3. Explain with examples the importance of attention, rehearsal, organization, and cues in memory formation.

4. When does attention, or rehearsal, or organization, or cues is not effective in memory formation?

5. Failure in attention, rehearsal, organization and cues result in different kinds of forgetting. Indicate the types of forgetting that occur in each case.

Self – Check Exercise 3

1. Define memory as a process

2. Compare and contrast:

2.1 Sensory, short – term and long – memories

2.2 Primary and secondary memories

2.3 Procedural and declarative memories

2.4 Implicit and explicit memories

2.5 Semantic and episodic memories

3. Identify and describe the major factors that affect memory formation.

Lesson 3.

❖ **Topics:**

A. Meaning of retention

B. The significance of forgetting

C. Factors affecting memory (causes of forgetting)

Overview

 You have learnt in the previous lesson, among others, which memory formation is a process that involves many activities to be performed at different phases? The question is "how much of the acquired information at the various phases do we retain and how much of it do we lose? What is forgetting and what causes it in the first place? Is it possible to recover the lost memory? How do we improve our memory so that forgetting can't be a threat?

This section attempts to answer the above questions. Having described the meaning and significance of retention and forgetting, it then tries to elaborate the different theories designed to explain the nature, causes, and effects of forgetting.

❖ **Objectives**

After studying this section, you will be able to:

- Define the term retention and forgetting
- Identify how retention and forgetting are measured
- Discuss the significance of retention and forgetting
- Identify the causes of forgetting
- Explain if lost memories can be recovered
- Explain how you can improve your memories
- Explain why do people differ in the rate of forgetting and retention

 **A. Meaning of retention**

As indicated previous lesson, memory formation is a process that involves acquisition, storage and retrieval. The difference between acquisition and retrieval is what we call forgetting: the higher the difference, the higher forgetting and vice versa. Forgetting is just the opposite of remembering or retention. Hence, forgetting means failure at any time to recall an experience when attempting to do so, or to perform an action previously learned.

H. Ebbvingaus (1885) and others have used four methods of measuring retention, or it's opposite, forgetting. The common and the simplest one is the method of recall, reproduction, or free – choice. This method involves asking the learner to freely recall or reproduce a material already learned. For instance, the learner may learn a list of 40 words and after 8 hours, he is able to recall or reproduce only 20 words. Thus his recall store is 20 out of 40 words or 50 percent.

The second method to measure retention is the method of recognition or forced – choice method. In a typical recognition test, the learner's; ability to recognize items he has just studied is tested by showing him the study item together with new items and asking him leaner to identify the study items.

The third method is the method of reconstruction. In this method, the learner first learns the material in a serial order and then the items of the learning material are mixed up and shuffled. Then the learner is required to rearrange the items in their proper sequence.

The forth method to measure retention is the method of **relearning or the saving method.** In this method, we first calculate the number of trials taken to learn the material in the beginning and then note down the saving of trials on relearning or the saving method. In this method we first calculate the number of trials taken to learn the material in the beginning and then note down the saving of the trials on relearning it after some lapse of time. For example, if the learner takes 10 trial to recite a whole poem correctly, and only takes 6 trials to master the same material after 2 days, his saving score would be:

$$\frac{10-6}{10} = \frac{4}{10} \text{ or } 40\%$$

Now try to redefine the four methods in terms of forgetting in the following activity

Activity 3

1. What is the amount of forgetting score in the examples given in methods 1 and method 2

_____
_____
_____
_____
_____

2.2 Compare and contrast method 1 and 2. Which one yields a more dependable score of retention or forgetting? Why?

_____
_____
_____
_____
_____

B. The significance of forgetting

As puzzling as how and why we remember is the flip side of the coin-how and why we forget. But, while forgetting is usually regarded as a liability, remembering is regarded an as asset.

Do you think forgetting is bad all the time?

When do you think forget is bad and when not? Why?

In our daily life we come across several kinds of experiences. As a matter of fact, every minute we get impressions about many things. We can't remember all these impressions and it is not essential to do so. We must be selective in remembering and forgetting. It is important for us to forget several experiences that are less useful for us daily. Because to remember important things we must forget unimportant ones – we forger to remember.

Hence, forgetting is not entirely a disadvantage. It is a restorative process, getting back to normal. The healing of a wound is a sort of biological forgetting. Forgetting of irrelevant things is essential, which otherwise would mean that they would be continually Coming up to consciousness and up, disturbing us and interfere with our adjustment to new situations. According to William James, "if we remembered everything, we should on most occasions be as ill off as if we remembered nothing." James believed that forgetting is adaptive because it rides us of useless information that may have impaired our recall of useful information. For Freud, forgetting is a process of repressing unpleasant ideas and needs, which, if remembered, could make us feel ill.

In fact there are instances whereby you may consider forgetting as a necessary evil. In the same way that forgetting is part of our daily life, it may become abnormal or pathological when it is exaggerated. A case in point is a situation in which the person may forget many of his experiences – including his name, house and relatives as a result of either brain injuries, brain disease called Alzamier or very disturbing and traumatic or tragic experiences. This kind of forgetting is **called amnesia.**

Forgetting is again a problem if the person can't forget or remember what he/she should and remember what he should not. That is, forgetting is pathological when it is not serviceable or when the person is controlled by it rather than controlling it. We have to learn to forget and forget to learn. True learning is judicious forgetting and remembering. Now attempt the following activity accordingly

Activity 4

1. Indicate when forgetting is a liability and an asset with examples.

_____
_____
_____
_____
_____
_____

2. What is selective forgetting? What does it mean to control forgetting and being controlled by forgetting?

3. How can you forget what you don't want to remember?

3.1 Types forgetting

A distinction sometimes made between traces - dependent and cue dependent forgetting. Trace -dependent forgetting results from the changes in the information stored about thé to - be remembered fact or event; cue-dependent forgetting results from the changes in the encoded form of the retrieval cue. You already know that retention performance may vary with variations in cues even when the target information is held constant. Variations in the encoding of the retrieval cue may occur even when the physical form of the cue is held instant. Such variations my occur not only in nominally non-cued retrieval situations (that is, in free - recall tests), but also in situations in which specific retrieval cues are present, but interpreted (encoded) differently than they were on an earlier occasion. It is quite possible, of course, that forgetting of any event or fact is partly trace - dependent and partly cue - dependent. Only under special laboratory condition can the two kinds of forgetting be analytically separated.

There are two kinds of changes in memory traces that result in trace - dependent forgetting: quantitative loss or qualitative alteration of the initially stored information in the former case, we cannot recall something we could recall before; in the latter case, what we recall is deferent from what we recalled before. In any given situation either one or both kinds of changes may occur. Psychologists have studied loss of stored information in experiments whose results are expressed in the form of forgetting curves and its alteration in experiments on "misremembering." We consider them in turn.

tasks to forgetting of verbal materials and everyday events, and to loss of information and qualitative changes in it. Most psychologists believe that different theories are necessary to account for forgetting in different situations.

Theories of forgetting have a long history and have entailed many different ideas. Long before psychologists stated studying forgetting in the laboratory, philosophers had come up with a number of relevant suggestions. Prominent among them was the thought that memory images suffered changes into course of time, undergoing progressive wakening, or perhaps even "sinking to the bottom of the soul". Another popular incident was that forgetting consisted of the crumbling of complex ideas into parts, separate fragments, together with the eventual loss of these fragments. Yet another group of theorists, who were particularly impressed by fact that names, faces, and other bits of knowledge and experience that seemed to be lost for many years could suddenly appear before the mind, supposed that memory images were only overlaid and covered by later ones, and could re emerge under appropriate conditions.

The major concepts used in more recent psychological theories of forgetting are representations of these earlier themes. Many psychologists today believe that forgetting in conic and echoic term memory is a result of decay of sensory information, whereas in short-term memory, forgetting results from displacement of information, by new incoming material. Forgetting in long-term memory situations, other than those in which apparent forgetting has resulted from the failure to gain access to the stored information, is thought to reflect the effects of interference.

Lesson - 4

- **Main topic: Theories of remembering & forgetting**
- **Objectives:**

At the end of the lesson, the students will be able to:

- Compare and contrast the various theories (Decay & Disuse) of memory and forgetting.
- Develop skill how to improve memory in their study skills.

- Appreciate why do people differ in the rate to forgetting and retention.

Subtopics:

4.1 Physiological Theories

There are two types of physiological oriented hypotheses to explain forgetting: decay **theory and memory disuse** theory.

4.1.1 Decay Theory: Memory has physical foundations in the brain. These physical basis of memory are called engrams. When memory is formed engrams are created. But engrams gradually fade away as time passes. So, forgetting occurs as a result of simple passage of time because as time passes engrams decay. According to this theory, therefore, we forget experiences occurring long time ago compared to recent experiences.

4.1.2 Memory Disuse Theory: according to this theory, engrams or physical traces of memory fade away not because of passage of time but because of failure to use them. That is while we my remember things that occurred long time ago, while we may possible forget recent experiences provided that the old one is used more frequently than the recent one. When experiences stored in the memory are used they can't be forgotten. But if they are not used every time, they can be forgotten.

Knowledge has to be used so that it may not be forgotten. Forgetting is disuse therefore a of stored knowledge in the memory.

Lesson – 5

- **Topic:**

5.1 Interference Theory

- **Objectives:**

At the end of the lesson, the students will be able to:

- compare and contrast with the pervious physiological theories of memory and forgetting.
- develop skill how to improve memory in their study skills.

- appreciate why do people differ in the rate to forgetting and retention.

Historically, the most widely held theory of forgetting, which holds especially well for verbal materials, is the interference theory. It takes several forms, but the main idea is that learning one thing is accompanied by the impairment of irretrievability of others. The impaired irretrievability may involve both availability and accessibility of the target information.

We need to distinguish between two kinds of interference, both of which play a role in forgetting. **Proactive** interference refers to the interfering effects of task, or a set of materials, learned before the learning of the task or the materials whose retention is measured. Retroactive interference refers to the reduction in the retention of tasks or materials caused by the subsequent learning of some other task or materials. The designs of minimal experiments in which proactive and retroactive interference are studied are schematically depicted on Table 2.

Table 2

Designs of Minimal Proaction and Retroaction Experiments

Effects studied	Group of subjects	First Task	Second Task	Task whose Retention is Being Measured
Proactive	Experimental	Learns A	Learn B	Second -B
	Control	----------	Learns B	Second -B
Retroactive	Experimental	Learns A	Learns B	First -A
	Control	----------	Learns B	First -A

In a minimal design, there are two groups of subjects, an experimental group and a control group, and two tasks (or set of materials). In the pro-action experiments, the second task is called the critical one, because the retention of the information acquired in that task is measured. The first task in the experimental group is somehow systematically related to the second, whereas in the control group it is unrelated. Pro-active interference is said to have occurred if the retention of the second task is lower in the experimental group than in the control group. If it is higher, then proactive facilitation is said to have occurred. We should note parenthetically that these are operational definitions of

proactive interference and facilitation. Many definitions in science are of this sort: A concept is defined in terms of the description of certain methodological operations that have to be carried out to produce an instance of the concept.

In the retroaction experiment, the critical task whose retention is measured is the first one. The second task is related to the first one in the experimental group and unrelated in the control group. Retroactive interference is said to have occurred if the retention score of the experimental group is lower than that of the control group. If it is higher, then retroactive facilitation is said to have occurred.

Many experiments have been done to study proactive and retroactive interference effects. These experiments have shown that particularly proactive effects can be massive. A student learning her first list in the laboratory might remember as much as 80% of the material 24 hours later, whereas the same student learning her fifteenth list may remember as little as 20% 24 hours later. Systematic studies of forgetting of everyday events, too show that the first events of a particular class - the first day in school, first date, first trip to a foreign land, firs meeting with an important person - are much better remembered than subsequent events of the same class. According to interference theory, it is the acquisition of earlier experiences of a particular kind that produces the accelerated forgetting of later ones of the same kind.

Lesson - 6

❖ **Topic:**

6.1 Information - Processing Theory

❖ **Objectives:**

At the end of the lesson, the students will be able to:

- compare and contrast with the pervious, physiological, interference theory.
- develop skills how to improve memory use in their study skills.

According to this theory, forgetting is the in availability or absence of information or else lack of access to the available and stored information.

Forgetting as unavailability of information implies that the issue to be remembered is not well registered (encoded) because of lack of attention, or perhaps it is well registered but not well interpreted and organized, or else it is well interpreted but not well practiced repetitively. Forgetting is simply failure of encoding, or decoding, or failure of storage. In all cases, the information to be remembered is lost or unavailable.

Forgetting as lack of access implies that the information is not lost or the information is available in the memory but the problem is that we can't recall it or recognize it. This is called **retrieval failure.**

In general, forgetting according to this theory is either a storage failure (i.e., unavailability of the information) or retrieval failure (i.e., lack of access to the stored knowledge). Accordingly, we have tow broad theories: theories of storage failure and theories of retrieval failure. While the former group of theories relate more to trace dependent forgetting, the latter group can be regarded as cue – dependent forgetting. Let us see them separately.

6.2 Storage Failure Theory: there are many theories designed to explain forgetting as a storage failure. Two of these theories are consolidation theory and retrograde and theory of organizational lack. According to the theory consolidation and retrograde, if the newly formed memory traces are not given time for consolidation and they are disturbed, then they will be wiped out.

Theory of organizational absence suggests that several people forget on account of lack of proper organization and systematization of the learned material.

6.3 Retrieval Failure Theory: according to this theory forgetting is not losing something but rather is more like being unable to find it. Forgetting is often a temporary phase rater than permanent phenomena.

This theory believes that forgetting as a retrieval failure occurs because the person is unable to get relevant retrieval cues. Hence, it is better called as cue – dependent theory

of forgetting. So, let us reinstate this theory as a cue-dependent theory and explore in detail the nature of forgetting.

Cue – Dependence Theory: because the retrieval of long term memories depends on adequate retrieval cues, forgetting can sometimes be explained by the failure to have or to use them. For example, odors that se associate with an event can aid our recall of it. This is known as **cue – *dependency theory.*** At times we might fail to find an adequate cue to activate the relevant portion of a semantic memory network. Consider the **tip-of the – tongue phenomenon**, in which you cannot quite recall a familiar word though you fee that you know it. As he did with may psychological phenomena, William James (1980/1991) noted this one a century ago. As demonstration, you might induce a tip – of the – tongue experience by trying to recall the seven dwarfs. You may fail to recall one or two of them, yet feel that you know them.

In an unusual experiment on encoding specificity, scuba divers memorized list or words while underwater or on a beach, and then tried to recall the words while either in the same location or in the other location. The results indicated that when the subjects memorized and recalled the words in different locations, they recalled about 30 percent fewer than when they memorized and recalled the words in the same location. This tendency for recall to be best when the environmental context present during the encoding of a memory is also present during attempts at retrieving it is known **as context – dependent memory.**

Similarly, even your academic performance can be affected by environmental cues. Half a century ago, a study found that college students performed worse when their exams were given in classrooms other than their normal ones. Perhaps you noticed this when you have taken a final exam in strange room if you find yourself in that situation, you might improve your performance by mentally reinstating the environmental context in which you learned the material.

There is controversy among memory researchers about whether the environmental context is important when recall is required, but not when recognition is required. The

means that your performance on an essay exam might be impaired if you took an exam in a strange room, but your performance on a multiple - choice test would not perhaps tasks that require recognition include enough retrieval cues of their own, making environmental retrieval cues relatively less important. But some researchers indicate that even recognition memory is affected by environmental context.

Over recall of memories depends not only on cues from the external environment but also on cues form our internal states. The effect on recall of the similarity between a person's internal states during encoding and during retrieval is called **state - dependent memory.** For example, memories encoded while the person is in a psychoactive drug induced state will be recalled better when the person is in that state. A variety of drugs induce state - dependent memory. These include alcohol, nicotine, Valium, nitrous oxide, and the Parkinson's disease drug.

Our internal states also reflect our mood, which can play a role in a form state dependent memory called ***mood - dependent memory***, in which our recall information that has been encoded in a particular mood will be best when we are in that mood again. The mood appears to act as a cue for the retrieval of memories. Thus, if you have an experience while you are in any angry mood, you might be more likely to recall details of that experience when you are again in an angry mood.

Closely related to mood-dependent memory is ***mood - congruent memory,*** which is the tendency to recall memories that are consistent with one's current mood. This effect was observed in a study in which moods were induced by having subjects smell either a pleasant odor (almond exact) or an unpleasant odor (the chemical pyridine). The subjects were then asked to recall past experiences. Those in the pleasant odor condition recalled a higher percentage of happy memories than did in the unpleasant odor condition.

Lesson - 7

- **Topic:**

7.1 Serial - Position effect

- **Objectives:**

At the end of the lesson, the students will be able to:

Sometimes people who use key words to pull central ideas in to memory can not remember one of the key words and so they forget the entire concept the word represents. Using catchwords is one way to ensure that you remember an entire series of key words and so the ideas they stand for catchwords are words made up of the first letters of other words.

Follow these guidelines when you prepare catchwords. First, circle the key words in your study notes. Then write down the first letter of each key word.
Now, if necessary, rearrange the letters to form an easily recalled catchword. It can be a real word or a made-up word.
For example, you might remember the letters E-I-R-D with the made- up word. EDIR what matters is that you create a word that you can automatically remember and that the letters in the word help you recall the key words and (so the ideas the key words represent)
After you create a catchword, test your self until you are sure each letter stands for a keyword in your mind. Here is how the catchword EDIR can be used to pull into memory.

An instructor in a psychology class described the following four techniques used in behavior therapy:

1. Extinction,
2. Imitation,
3. Reinforcement, and
4. Desensitization. Make up a catchword that will help you remember the four techniques.
5. Space memory work over several sessions.

If you try to do a great deal of self –testing at any time, you may have trouble absorbing the material. Always try to spread out your memory work. For instance, three two-hour sessions will be moving effective than one six-hour session.

Spacing memory work over several time periods gives you a chance to review and lock in material you have studied in an earlier session but have begun to forget. Research shows

that we forget a good deal of information right after studying it. However, review with in twenty-four hours after you first study it. Then, if possible, several days later review again to make a third impression or "imprint" of the material in your head. If you work this consistently to retain ideas and details, they are not likely to escape you when you need them during an exam.

6. Over learn the material.

If you study a subject beyond the time needed for perfect recall, you will increase the length of time that you will remember it. You can apply the principle of over learning by going over several times a lesson you have already learned perfectly. The method of repeated self-testing is so effective partly because it forces you to over learn. After you study each new idea, the method requires that you go back and recite all the previous ideas you have studied.

Another way to apply the principle of over learning is to devote some time in each session to review. Go back to restudy – and over learn – important material that you have studied in the past. Doing so will help ensure that you will not "push out" of memory old ideas at the time you are learning new ones.

7. Use as a study period the time just before going to bed.

Study thoroughly the material to be learned. Then go right to sleep with out watching a late movie or allowing other activities to interfere with your new learning. You mind will work through and absorb much of this material during the night. Set your clock a half – hour earlier than usual so that you will have time to go over the material as soon as you get up the morning review will complete the process of solidly fixing the material in your memory.

Have you ever used this technique and found it to be helpful?

Summary

An important dimension of human' intelligent life (or mind and behavior) that normally follows sensation and perception is memory – a warehouse of our past life-events. Memory has different forms and hence it is classified in to different types:

- ñ Sensory, short – term and long-term memory,
- ñ Primary and secondary memory,
- ñ Procedural and declarative memory,
- ñ Episodic and semantic memory, and
- ñ Explicit and implicit memory.

Whatever form it may take memory is a three-stage process of acquiring, storing, and retrieving information. Different factors affect the success of memory formation in each stage e.g., attention, rehearsal, organization, and retrieval cues.

The difference between the amount of acquired in formation and the information that is retrieved is called forgetting. The rate of forgetting is basically higher immediately after learning- a phenomenon called instant forgetting. Forgetting occurs not only because of absence of the acquired in formation. It may also occur because of distortion of the acquired information – disremembering.

There are different methods of measuring forgetting: free-recall recognition, reconstruction, and relearning methods. No matter what form it may take, forgetting is not a necessary evil. It is a normal part of life. And it is a necessary evil when it becomes involuntary, non serviceable, and pathological, as in the case of amnesia.

There are different explanations why forgetting occurs. Physiological, motivational, interference, information – processing and serial position theories are among the most popular explanations we have at preset.

Addis Ababa University
School of Graduate studies

12. Appendix X (A) Activities result for reading group of ten students

No	Activity One (10%)	Activity Two (10%)	Activity Three (10%)	Activity Four (10%)	Activity Five (10%)	Total 50%
1	8	6	8	6	6	34
25	8	7	7	6	5	33
3	7	6	7	5	6	31
4	6	6	5	4	5	26
5	8	7	5	4	4	28
6	7	6	5	5	5	28
7	7	6	6	6	5	30
8	7	6	6	6	6	31
9	8	7	6	5	5	31
10	8	6	6	5	4	29
Total	**74**	**63**	**61**	**52**	**51**	**301**
Mean	**7.4**	**6.3**	**6.1**	**5.2**	**5.1**	**30.1**

SD = 8.55

Declaration

This thesis is my original work, it has not been presented for degree in any other University and that all sources of material used for this thesis have been duly acknowledged

Name Abiye Heripa

Signature .....

Place Addis Ababa University

Date June 2004

Addis Ababa University
School of Graduate students

12. Appendix X (B) Activities Result for lecture Group

No	Activity One (10%	Activity Two (10%)	Activity Three (10%)	Activity Four (10%)	Activity Five (10%)	Total (50%)
1	8	6	6	5	5	30
2	6	7	5	5	5	28
3	6	7	4	5	5	27
4	5	5	3	3	4	20
5	7	6	6	5	5	29
6	5	4	3	3	4	19
7	6	5	4	3	5	23
8	6	4	5	4	5	24
9	7	5	6	6	6	30
10	6	4	2	5	5	25
Total	**62**	**53**	**47**	**44**	**49**	**255**
Mean	**6.2**	**5.3**	**4.7**	**4.4**	**4.9**	**25.5**

SD = 8.60

Addis Ababa University

School of Graduate Studies

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

Name Belay Tefra (Dr)

Signature .....

Date of submission .....